The Differential Influence of Disrupted Family Processes by Gender on Behavioral Health Risk in Court-Involved Juveniles

DISSERTATION

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Abstract

This study seeks to extend the body of knowledge concerning influences on delinquency by using parent versus child perspectives in examining gender differences in how disrupted family processes influence adolescent behavioral health and substance use. Although several research studies have shown that adolescent delinquency is different for males than for females, few have looked into the possible influence of family processes on this phenomenon and even fewer have studied family processes with data from both youth and parent perspectives.

Previous analysis of data from the same adolescent risk assessment instrument as used in this study yielded a gender by family interaction in a racially diverse sample of court-involved adolescents (Gavazzi, 2008). Although a family systems theoretical orientation (Broderick, 1993) was embedded in the development of the GRAD assessment tool through the ability of the instrument to handle the collection of data from multiple vantage points including adolescents, parent and professionals, the Gavazzi et al. (2008) study only utilized the youth perspective. It indicated one area for future exploration involved the use of more than one family member perspective. This study responds to this limitation of the previous study by employing both the parent and child perspectives (Bartle-Haring & Gavazzi, 1996: Bartle-Haring, et al, 1999) in examining the potential influence of disruptive family processes on behavioral health in adolescents.
With the Gavazzi et al. (2008) study in mind, the main hypothesis tested in this study was that perspective matters when examining family factors that impact mental health (i.e., internalizing problems and externalizing problems) and substance use in adolescent, court-involved populations. The hypothesis that perspective matters was upheld. There was a significant difference in the scores of adults and youth regarding all three behavioral health indicators with parents consistently reporting fewer problems.

The second hypothesis that disrupted family processes from the adolescent perspective would be a stronger indicator of mental health and substance abuse among court-involved youth than disrupted family processes from the parent perspective was not upheld. The parent and youth perspectives tested separately provided similar model fits overall. The full dyadic model produced the best model fit for the total sample of all models tested. In both the full dyadic model and the individual models with each perspective predicting their own outcome responses, disrupted family process significantly predicted all three outcomes. Further, there was a significant increase in explained variance when the adult perspective on disrupted family processes was added to the youth perspective.

The last hypothesis was that the association of disrupted family processes to behavioral health risk would be stronger for females than for males. This hypothesis was not upheld. Instead, the multiple group analysis results indicated that the paths for male and female court-involved youth from disrupted family processes to internalizing and substance abuse were equivalent while the strength of the relationship between disrupted family processes and externalizing behaviors was higher for males.
Just as in the current study, the Gavazzi et al. (2008) study found that disrupted family processes were significantly associated with higher levels of behavioral health problems in both genders. It also found that disrupted family processes were operating differently related to internalizing and substance abuse problems in females (Gavazzi et al., 2008). Although these findings are different, they are complementary. Together these studies provide compelling evidence that disrupted family processes may influence behavioral health outcomes differently by gender, and underscore the importance of gathering both the youth and parent perspectives when conducting assessments.
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Publications


Fields of Study

Major Field: Human Ecology

Area of Specialization: Human Development and Family Science

Cognate Area: Adolescent Behavioral Health Risk Factors
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Chapter 1: Introduction

Purpose of Study

This study seeks to extend the body of knowledge concerning influences on delinquency by using parent versus child perspectives in examining gender differences in how disrupted family processes influence adolescent behavioral health and substance use.

Specific research in this area is particularly important because the outcomes of even the best designed prevention interventions have moderate impacts on desired outcomes. The lack of success is not surprising in that most of these interventions are based on theories derived from research using only a parent or child perspective and without taking the influence of family factors into account. Another factor is that the mechanisms that influence behavioral health problems are not understood well enough to advance effective prevention strategies (Moffitt, 2005). Many programs focus primarily on the idea that peer pressure is the primary cause of adolescent drug use and delinquent behavior when there is evidence that prevention and intervention programs focusing on family processes can help enhance protective factors to reduce the risk of adolescent problem behaviors (Bahr, Hoffmann, & Yang, 2005).

Although several studies have reported the phenomenon of the differences in delinquency based on gender, few have looked into the possible influence of family processes on this phenomenon and even fewer have studied family processes with data from both youth and parent perspectives. This study seeks to extend the findings of a
2008 study published in the *Journal of Youth Adolescence* by Gavazzi, Lim, Yarcheck, Bostic, & Scheer that identified differences between male and female juvenile offenders in regard to family process, mental health and substance abuse. The Gavazzi, et al. (2008) study found that disrupted family processes were significantly associated with higher levels of internalizing problems, externalizing problems, and substance abuse for both genders. However, disrupted family processes were more related to internalizing problems and substance abuse in females. It supported family processes playing a central role in adolescent adjustment variables associated with behavioral health factors but in different ways for each gender (Gavazzi et al., 2008). Although, these analyses were conducted solely with data from the adolescent’s perspective, the study called for future analysis using multiple family member perspectives. “The assessment of parental viewpoints may provide a different picture of the interactions found in the present study and, in related fashion, the comparison of adolescent and parent viewpoints may contribute to a more balanced picture of both family interactions and related youth behaviors” (Gavazzi et al., 2008). This study seeks to provide this more balanced picture of how family factors influence youth behavioral health.

Gender differences for delinquency and substance use are well known. However, the causes of these differences are still not fully known with possible explanations including various biological and environmental risk factors or a combination of factors in interaction (Fishbein & Perez, 2000).
Definition of Terms

_Adolescent_

A young person going through the biological and psychological changes that occur during and after puberty and until maturity into adulthood.

_Court-Involved Juveniles_

These are youth under the age of 18 that come into contact with the court system in a variety of ways such as arrest, juvenile petition/complaint or indictment for a delinquency offense, a crime that could be charged to an adult, or a status offense, a crime for a juvenile only because of their status as a legal minor.

_Child Development_

Child development refers to the biological and psychological changes that occur in human beings from birth through adolescence. Genetic factors and prenatal development are included in the study of child development due to the important influence of these factors on later development. Development occurs as the result of genetic, biological and psychosocial processes and their interactions.

_Behavioral Health Risk_

Behavioral Health Problems are difficulties in a person's overall psychological and emotional condition which may result or contribute to adverse life conditions. Risk for these problems is defined as anything that may contribute to the manifestation of an internalizing or externalizing behavioral health disorder.

Internalizing Behavioral Health Disorders include psychological problems manifesting within the individual. These disorders may be diagnosed and treated by a
licensed behavioral healthcare provider or a physician. These may or may not reach clinical levels for disorders such as, Anxiety, Mood, Personality, and Adjustment Disorders, as required by the criteria for each disorder in the current version of the Diagnostic and Statistical Manual of Mental Disorders (DSM) published by the American Psychiatric Association.

Externalizing Behavioral Health Disorders include difficulties in a person’s relationship and functioning in their environment. These may or may not reach clinical levels for disorders such as, Attention Deficient/Hyperactivity Disorder (ADHD), Oppositional Defiance Disorder (ODD) and Conduct Disorder (CD), as required by the criteria for each disorder in the current version of the DSM.

*Disrupted Family Processes*

Family processes are interactions that occur within a family which serve to influence developmental outcomes. Disruptions in these processes such as a lack of a warm, loving parent/child relationship, lack of appropriate discipline and monitoring or lack of appropriate adult role models may negatively impact child/adolescent development.

*Gender*

In this study, the term gender is used to differentiate males versus females in the study sample. In the study assessment instrument, individuals self-selected their gender based on the social role with which they most closely identified.
Substance Use, Abuse and Addiction

Substance use is infrequent use and/or low doses that can be considered experimental, occasional or social and where there is a lack or rarity of related, harmful consequences.

Substance abuse involves more frequent use and/or higher doses where related consequences are unpredictable and sometimes harmful.

Substance addiction involves a compulsion to use with severe, harmful consequences. It is a chronic, relapsing disorder often characterized by psychologically and/or physical dependence. Substance dependence is addiction requiring frequent and compulsive use and is characterized by craving and withdrawal symptoms when not using.

Statistical Non-Independence

Non-independence refers to the relatedness in data collected from individuals (or groups) that are associated in some way. This interaction between individuals is thought to influence their responses making them either more similar or more different than the paired responses of individuals that were not associated in some way. David Kenny refers to non-independence as the correlation between linked observations (Kenny, 2009). Non-independence in a variable refers to the degree of similarity between the two members of the dyad on that variable. Consequential non-independence or the level that needs to be present to result in the probability of committing a Type I error is about 0.45 (Kenny, Kashy, & Cook, 2006).
Research Hypotheses

With the Gavazzi et al. (2008) study in mind, the main hypothesis proposed in this study is that perspective matters when examining family factors that impact mental health and substance use in adolescent, court-involved populations.

The Gavazzi et al. (2008) study’s hypothesis was that family factors impact both mental health and substance use in adolescent populations, with the supposition that these associations may be stronger for females than for males. This study extends this hypothesis by testing assessment data collected from two perspectives to provide further insight into these gender differences.

It is also hypothesized that disrupted family processes from the adolescent perspective will be a stronger indicator of mental health (i.e., internalizing problems and externalizing problems) and substance abuse among court-involved youth than disrupted family processes from the parent perspective. It is still supposed these associations will be stronger for females than males from either the youth or adult perspective.

Challenges of Dyadic Data Analysis

Although social science theory has moved toward recognizing the relational and interactional nature of human behavior, statistical techniques to facilitate this type of analysis have been slow to follow. Dyadic techniques help fill this gap.

Traditional correlational statistics do not separate out the effects of dyadic and individual-level processes. However, statistical methods that take into account the interdependence introduced by data collected from individuals related in some way are
greatly needed (Griffin & Gonzalez, 1995). Typically data is collected from individuals within dyads. The non-independent nature of dyadic data presents both statistical and conceptual challenges at both analysis and interpretation. Results can reflect variable relationships at both the individual and/or dyadic levels. However, dyadic data analysis methods may “encourage more precise and complex theories of interpersonal behavior” (Griffin & Gonzalez, 1995). Interaction impacts correlational statistics because it introduces extraneous uncontrolled variation and covariation. However, moving the level of analysis from the individual to the group reduces the number of units analyzed reducing the power of the analysis. These methodological challenges helped deter studying actual social interactions (Griffin & Gonzalez, 1995).

Standard statistics are based on the assumption of independence and use the process of induction (Bartle-Haring, 2008). The independence assumption means that once variation due to independent variables is controlled, the scores of individuals are unrelated (Kenny, Kashy, & Cook, 2006). Dyadic data violates this assumption because the dyads are related, and therefore cannot be treated as individuals. This is important because standard probability statistics rely on knowing the exact number of repetitions needed. Treating dyads as individuals results in over counting because it does not adjust the degrees of freedom and therefore biases the p and F values for correlation, ANOVA and regression (Bartle-Haring, 2008).

Although ignoring non-independence does not bias effect estimates such as unstandardized regression coefficients and mean differences, it does bias standardized measures and variances which impact standard errors and therefore test statistics (Kenny,
Kashy, & Cook, 2006). Two factors influencing the direction of this bias include the type of independent variable and the direction of the correlation on the outcome variable (Kenny, Kashy, & Cook, 2006). When the independent variable is between dyads and the correlation is positive, the test is too liberal and most frequently causes the inferential statistic to be too large and the p-value too small. This results in too many Type I errors. Type I or Type II errors impact correctly rejecting or accepting the null hypothesis (Kenny, Kashy, & Cook, 2006). These errors suggest or reinforce incorrect views on behavioral phenomena that could be better understood using dyadic data analysis techniques. Because of these issues, power to detect non-independence in dyads and in statistical testing of the independent variable when using dyad as the unit of analysis is a major concern. Large dyadic samples are needed to detect small effect sizes.

Consequential non-independence is about 0.45 (Kenny, Kashy, & Cook, 2006). A sample of 44 dyads would provide enough power (power of at least 0.80) to detect this level of relatedness with a two-tailed test of non-independence, a between dyads independent variable and alpha at 0.05 (Kenny, Kashy & Cook, 2006).

Non-independence refers to the phenomenon of relatedness in data collected from associated individuals or groups. The formal conceptual definition used by Kenny, Kashy and Cook is, “If the two scores from the two members of a dyad are non-independent, then those two scores are more similar to (or different from) one another than are two scores from two people who are not members of the same dyad” (Kenny, Kashy, & Cook, 2006). This interaction between individuals is thought to influence their responses making them either more similar or more different than paired responses of
individuals not associated. David Kenny refers to non-independence as the correlation between linked observations (Kenny, 2009). Non-independence in a variable refers to the degree of similarity between the two members of the dyad on that variable. The degree of non-independence in outcome variables influences data analysis plans. If a consequential level of non-independence is found, then dyad needs to be the unit of analysis instead of the individual. This correlation can be positive or negative (Kenny, 2009). Also, some dyadic data analysis methods cannot handle negative non-independence. The techniques treat the data with a negative correlation as independent (Kenny, 2009).

Dyads originate from various sources including: kinship linkages such as parent and child or family members; voluntary links such as couples who are dating or friends; yoked linkages that result from both individuals being exposed to the same environment such as a classroom or intervention program; and experimental linkages which are created specifically for scientific experiments (Kenny, Kashy, & Cook, 2006). When analyzing dyadic data, it is important to note if dyads are distinguishable or if there is a meaningful factor that can be used to tell the dyad members apart such as role in family dyads or gender in heterosexual couples. Examples of indistinguishable pairs include same-sex friendships or coworkers (Kenny, Kashy, & Cook, 2006).

Two ways to handle dyadic data challenges are to change the unit of analysis to confirm and explore non-independence and to use appropriate estimation techniques such as multilevel modeling (MLM) or structural equation modeling (SEM). Since social science has an interest in better understanding interdependence and mutual influence in relationships, dyadic data analysis methods provide fruitful analysis techniques.
The Intraclass Correlation (ICC) based on ANOVA techniques can also be used to explore similarity within dyad members and can be used for indistinguishable pairs. The ICC and Pearson Correlation for distinguishable dyads are usually very similar. They are the same when the means and variances for the dyad members are similar, but the ICC is smaller when they are different. ICC can be used as an index of dyad-member similarity (Maguire, 1999). ICC is the proportion of variation in the outcome measure that is accounted for by dyad. The ICC is not usable when negative because it treats the non-independence as variance instead of correlation (Kenny, 2009). Both the Pearson and ICC are biased when the real correlation is zero; however the bias is trivial when sample sizes are greater than 30 (Kenny, Kashy, & Cook, 2006). Kenny, Kashy & Cook suggest using kappa as a measure of non-independence for categorical outcomes and a variant of kappa for indistinguishable pairs. All these tests are considered preliminary, because further testing is needed to determine if there is non-independence after controlling for the effects of the predictor variable (Kenny, 2009). A liberal test (p = .20, two-tailed) is recommended when testing for non-independence due to the potential for bias in significance tests if there is consequential non-independence (Cooke & Kenny, 2005).

Two estimation methods, MLM and SEM, can also be used to test models of equivalence and correlation (Kenny, Kashy, & Cook, 2006). Pooled regression is another method, but it is rarely used due to limitations not encountered by MLM and SEM methods. SEM is particularly helpful for distinguishable dyads because it can handle multiple variables and mixed variable types. MLM was adapted from developmental data analysis methods such as repeated measures analysis of variance and hierarchical linear
modeling. Dyadic data can be conceptualized as a repeated measures or longitudinal
design because there are multiple observations of the same unit of analysis (Bartle-
Haring, 2008).

SEM has the least number of assumptions and data restrictions (Bartle-Haring,
2008) which is why it was selected for use in the analysis for this study. Steps in using
SEM include: specifying the model, identification, estimation and testing. In SEM,
multiple equations can be tested simultaneously and specific parameters can be specified
(Cook & Kenny, 2005). This allows comparison of different types of effects when
parameters are equal and not equal by comparing the chi-square goodness-of-fit value for
each model with the two parameters forced to be equal to the chi-square goodness-of-fit
value for the same model (Cook & Kenny, 2005). SEM techniques also allow the use of
latent structure models which have wide applicability and flexibility in analyzing social
interaction data such as dependence between and across actors and interdependence in
reciprocal models (Dillon, Madden, & Kumar, 1983).
Chapter 2: Review of Literature

Theoretical Framework

The notion of the primacy of parental influence on child development began early in the 20th century with Freud and continued with attachment, modeling and parenting style research among others. Recently the influences of other domains and the interrelationships between domains have come into the spotlight for consideration. Social cognitive/learning theory suggests that, “human development and functioning are highly socially interdependent, richly contextualized, and conditionally manifested” (Bussy & Bandura, 1999).

This multi-causality and reciprocity of influences is reflected by Urie Bronfenbrenner’s Ecological Systems Theory (EST), which therefore has great explanatory power regarding the influence of parents and parenting on child development particularly in the areas of delinquency and substance abuse. This theory takes a contextual approach to child development. EST is considered a psychosocial child development theory because it recognizes the agency of the child in the developmental process and focuses on the interplay of the multiple contexts. Since its widespread publication in 1979, Bronfenbrenner's idea to conceptualize human development as a nested series of influential factors has been revolutionary to the social sciences field. It has had widespread influence on theory development, research design and methods,
intervention development and implementation and public policy. One example is that Bronfenbrenner was a founder of the nationwide Head Start program.

It has also become the accepted foundational theory used in developmental and family related research due to its broad scope and foundations in earlier learning theories and General Systems Theory. As a result of the sheer number and variety of studies and program evaluations using the theory, it has strong empirical support. Even the cutting edge neurobehavioral research is founded on the assumptions of dynamic interaction between the child and their environment.

Richard M. Lerner, the director of the Institute for Applied Research in Youth Development at Tufts University, said the following in his foreword to Bronfenbrenner’s 2004 book *Making Human Beings Human*. "Urie Bronfenbrenner stands as first among his peers. His ideas have been the ones that have stood the test of time to represent the fundamental concepts used in all of the developmental systems theories that constitute the cutting-edge modes of human development" (Bronfenbrenner, 2004, p. xii).

Steinberg also credits the theory with the “move away from a global conceptualization of context toward a perspective that attempts to draw finer distinctions within settings and identify the specific dimensions of context that are most important” (Steinberg, 2001). This shift goes beyond the social address model of context which merely focuses on structural variables, such as household composition or type of peer crowd. EST researchers began to identify mediating and moderating processes and variables that accounted for variance differences (Steinberg, 2001).
Bronfenbrenner's theory posits that a child's genetics and biology interact with their environment to influence development. It illustrates that all ecological domains contribute to child development in varying ways and in varying degrees (Bronfenbrenner & Evans, 2000). Under this theory, an encouraging and nurturing environment will set the stage for optimal development. Bronfenbrenner later renamed the theory “Bioecological Systems Theory” to emphasize the importance of the child’s biology in advancing development (Bronfenbrenner & Ceci, 1994).

EST has also been called "Development in Context" or "Human Ecology" theory. The theory specifies nested environmental systems, with multi-directional influences within and between the systems. This person-process-context-time model of environmental influences is conceptualized by a series of concentric circles with the individual in the middle circled by contextual environments in order of most directly influential to the individual. The individual or person in the middle represents all the genetic, biological, psychological and behavioral characteristics of the individual. The process component of the model takes into account the individual in interaction with their ecological context. The context component refers to the levels of the ecosystem. While time represents developmental change.

One of the main strengths of this theory in providing a basis for understanding adolescent risk behavior is that it provides a mechanism to explain the equifinality and multifinality which has plagued modern adolescent behavior research. Equifinality explains that different inputs or conditions can produce the same result; and conversely, multifinality is that the same input or condition can produce different results (Von
Bertalanffy, 1968). These phenomena lead to Bronfenbrenner’s objections to modern psychology research. His two objections were that in trying to conduct scientifically rigorous studies, psychologists relied on looking at specific behaviors out of context in artificial environments which calls into question the ability to generalize their findings to real life (Bronfenbrenner, 1977).

Although it can be argued that one of the weaknesses of Bioecological Systems Theory (EST) is that it is so broad that any contextual study including children and parents could be cited in its support (Boss et al., 1993), the sheer number and variety of studies using its foundational assumptions is overwhelmingly convincing as to its utility. Laurence Steinberg and Richard Lerner cited the “ecological perspective on human development” (Bronfenbrenner, 1979) with influencing the vast amount of research produced concerning adolescence and risk behavior during the late 1980s and the early 1990s. He credited it with drawing researchers’ attention toward life span transitional periods that are “characterized by dramatic changes in the context, and not simply the content, of development, making adolescence a natural magnet for researchers interested in contextual variations and their impact (Steinberg & Lerner, 2004, p. 49).” They agreed with Steinberg and Morris (2001) that EST was arguably one of the most significant ideas that would transform the study of adolescent development (Steinberg & Lerner, 2004). They also suggested that using EST has increased the development, innovation and evaluation of community-based interventions. One example is in Benson’s conception of developmental assets (Steinberg & Lerner, 2004) and in Hawkins and Catelano’s development of their risk and protective factor framework. Steinberg also credits the
theory with the movement toward less global and more specific research on the most salient dimensions of context (Steinberg, 2001).

In Brofenbrenner’s 1986 Ecology of the Family as a Context for Human Development: Research Perspectives article in the Journal of Developmental Psychology, he provides a review of “theoretically convergent but widely dispersed body of research on the influence of external environments on the functioning of families as contexts of human development” (Brofenbrenner, 1986, p. 723). He cites dozens of research studies from various countries falling under all the levels of his model of ecology including: gene/environment interaction in family processes; transitions and linkages between the family and other major settings; and public policies impacting families and children. All these studies support the vast explanatory power of EST. He also included studies that focused “on the patterning of environmental events and transitions over the life course as these affect and are affected by intrafamilial processes” (Brofenbrenner, 1986, p. 723). The finding in these longitudinal studies that context matters when predicting outcomes supports the predictive power of the theory.

The Sourcebook on Family Theories and Methods provide six studies from the 1980’s as examples of the utility of ecological theory in studying child development in a variety of cultures and contexts (Boss et al, 1993). The Families Count: Effects on Child and Adolescent Development book in the Jacob Foundation Series on Adolescence dedicates all 15 chapters to exploring how families and parents in particular influence child development in various contexts. Several of the chapters cite an ecological theoretical foundation and one is even named “The Family-Child-Care Mesosystem.”
The findings cited in this book support the importance of looking at parents and the parenting role in child development through a contextual lens. In the book’s summary chapter, Clarke-Stewart concludes that longitudinal, multivariate studies and adoption studies go beyond showing simple correlation between parent and child behavior. The most compelling finding that family matters is that the development improves of children removed from high-risk environments through adoption, while the development of children left in high-risk families worsens (Clarke-Stewart & Dunn, 2006). This statement reflects findings from rigorously designed research studies that support the primary influence of parents and parenting and the importance of environment.

Bronfenbrenner's theory is built on the work of early philosophers such as Plato and Aristotle (Boss et al., 1993) and theorist such as: Charles Darwin; zoologist, Ernest Haeckel who is credited with coining the term ecology; psychologist, Lev Vygotsky; and biologist, Ludwig Von Bertalanffy. Belarussian, Lev Semenovich Vygotsky’s influence is evident in the very foundation of Bronfenbrenner’s theory. He even mentions using the basic ideas of Vygotsky in his 2004 book (Bronfenbrenner, 2004). Vygotsky investigated how child development is influenced by culture and interpersonal communication; and he developed theories on how higher mental functions develop through social interactions with significant people in a child's life. Contrary to the predominant educational practices influenced by John Piaget’s theories, which say that learning follows cognitive maturity and advances in stages, Vygotsky considered learning as a shared process in a social context. Much educational theory and practice used today for special needs children is based on Vygotsky’s work.
It is also obvious, even directly through the theory’s name that Ecological Systems Theory is built on General Systems Theory (GST) which originated in biology in the 1920s to help explain the interrelatedness seen in ecosystems (Boss et al, 1993). Von Bertalanffy’s 1968 book on General System Theory, presented GST as a new paradigm for science. Von Bertalanffy defined a system as “sets of elements standing in interrelation” (Von Bertalanffy, 1968) which assuredly can be applied to the nested levels of ecology.

The three categories among GST core concepts that show up most strongly in EST are dynamic interaction, purpose and organization. Lerner explains how the emphasis that developmental system theories place on the integration among all the levels of organization involved in human ecology provides a basis for change and growth across the entire life span (Lerner, 2001). Purpose in EST is also evident. In relational, dynamic developmental systems thinking, individuals are active agents in their own development. They are not passive recipients of genetics or of stimuli that determine their behavior. Instead, people are goal-oriented and actively shape their own complex development. Children influence as well as are influenced by other individuals they come into contact with such as parents, siblings, peers, etc. "From a relational, dynamic developmental systems perspective, the interactions between the parent and child are at the core of parenting” (Lerner, 2001, p. 343). The role of these dynamic processes help address the criticism that EST is too global and does not address specific mechanisms of influence on outcomes (Gavazzi, 2011).
Because EST has become so widely used, it is difficult to pick up any textbook on families, parenting or child development without encountering its use in the majority of research cited. In the introductory chapter of his edited volume on Perspectives on Adolescent Risk Behavior, Richard Jessor discusses how developmental research has changed in recent decades. “Single variable explanations, such as low self-esteem or the absence of positive role models, have given way to well-articulated, multivariate, multilevel accounts that implicate person, context, and their interaction” (Jessor, 1998, p. 2).

Bronfenbrenner’s EST model provides a framework for not only understanding how the individual is influenced by the immediate family environment but also for understanding how family processes are influenced by conditions outside the family (Boss et al., 1993). This nested model shows the individual in the center with the Microsystem directly surrounding the individual. The Microsystem is the complex relationships between the individual and immediate settings such as family, friends, peers and schools (Bronfenbrenner, 1977). At this level, bi-directional influences are strongest and have the greatest impact on the individual making the family the principal context for development (Boss et al., 1993). However, interactions at other levels are still influential. The next circle is called the Mesosystem that are the interrelations among the major settings in which the individual spends time. A Mesosystem is a system of Microsystems (Bronfenbrenner, 1977). The next circle of influence on the developing person is the Exosystem. Unlike the first two systems that were direct influences on the individual, these are the mediating and/or moderating influences of larger systems and social
structures such as workplace, peer crowds, school system and community on the person’s environment (Bronfenbrenner, 1977). Exosystems include the neighborhood, mass media and government agencies. The outer circle is the Macrosystem that includes more global influences of society, culture and economy. It includes things such as ideals, values, ethics, social norms and religion. The effects of larger principles and ideologies defined by the Macrosystem have influence throughout the interactions at other levels (Bronfenbrenner, 1977). Another level of the model, Chronosystem, was added later to reflect the influence of time (Boss et al., 1993). Time is important in research design because of its necessity in showing development.

The dynamic interaction between all these levels is key to understanding the important change in thinking this theory brought about. In this model, child development takes place through progressively more complex interactions between the child and their environment. Tenets of the theory include: the child is at the center of the model; the child is an active agent influencing their own development; the family is the most influential environment for the young child due to the quantity and quality of time and interaction or proximal processes with them; and interactions occur between environments. Development is seen as both continuity and change within both the individual and contextual groups (Bronfenbrenner, 2004).

Bronfenbrenner put forth the ultimate aim of research as “the systematic understanding of the processes and outcomes of human development as a joint function of the person and the environment (p. 107)” derived from Kurt Lewin’s 1935 formula that behavior is a joint function of person and environment (Bronfenbrenner, 2004). In
keeping with Lewin’s original thoughts, the formula is not a simple additive model due to the General Systems Theory notion of nonsummativity or the whole being more than the sum of its parts. He complains that unfortunately this focus has led to much research that has helped us better understand context but has not much improved our understanding of the developing individual (Bronfenbrenner, 2004). This change in the formula is in keeping with the switch from class theoretical research (explanation through classification) to field theoretical research (specification through process) (Bronfenbrenner, 2004). Families are not just passive structures that contexts act on to create linear change, but they are engaged in dynamic interactions with each other and their environments actively creating their own purpose and meaning and therefore shaping the impact of inputs into their family system.

Family scientists and practitioners cannot hope to be successful in understanding the nature of problems within families with adolescents or how to implement effective interventions to ameliorate these problems without understanding the hierarchical order of how families are structured both internally and within their environment and how various processes flow back and forth through these various levels of influence to impact the family and the context in which they are situated. Any change at any level, influences all the other levels. The modern version of EST focusing on these Process-Person-Context-Time components of the theory support the potential explanatory value of the theory to help understand the multiple influences on families with adolescents (Gavazzi, 2011).
Since EST highlights the nonsummative, dynamic interactive nature of systems, it is an appropriate theoretical approach when studying complex phenomena in context such as the influence of family processes on court-involved youths’ behavioral health. It is also useful as a framework for studying the interactions of the multiple variables in this study. Since few topics of interest to family researchers are simple and linear, this is a perfect approach to highlight complexity and context. For example, Richard Jessor used EST as a basic framework for his Problem Behavior Theory which seeks to explain the mechanisms behind maladaptive adolescent behavior such as delinquency and substance abuse.

Systems thinking, in general, provides a mechanism to explain not only maladaptive behaviors, but the purposive behavior of systems as a whole, while simultaneously allowing for individual change over time (Braithwaite & Baxter, 2006). It also promotes the importance of using multiple perspectives (Braithwaite & Baxter, 2006). By highlighting the importance of teleology or goal-directedness, GST provides a powerful explanation for behaviors that while being good for the family as a whole, may be harmful to individual family members. This has become a key principle in developing therapeutic interventions for families.

The primary strength of GST is that by nature it is a meta-theory which has the potential for unifying other theories. Because it is based on general principles found in multiple fields of science, it is comfortable to us on an intuitive, common sense level. Since GST highlights the non-summative, dynamic interactive nature of systems, it is an appropriate theoretical approach when studying complex phenomena in context. It is also
useful as a framework for studying the interactions of multiple variables. Since few topics of interest to family researchers are simple and linear, this is a perfect approach to highlight complexity and context. GST “ranks as one of the most influential and generative of all the family conceptual frameworks” (Broderick, 1993, p. 5). By highlighting dynamic interaction, GST provided a new paradigm for family researchers to consider marital and family dynamics (Rosenblatt, 1994). It also promotes the importance of using multiple perspectives (Braithwaite & Baxter, 2006).

Another major strength of GST is that its application does not limit prediction only into the future, but also provides processes for understanding the past, present and future as a whole. For example, time series analysis provides a statistical method to take into account many variables at multiple points in time. This allows for the parsing out of variance in a more complex manner than traditional one-way ANOVA or regression which follows from the linear thinking tradition. Its primary strength is also the reason that GST obscures many specific issues. Because it is a framework to understand complexity, it sometimes obscures the explanation of specific phenomena. The inability to operationalize abstract concepts for measuring limits its use (Boss et al., 1993). This has prompted some researchers to advocate for its use in conjunction with a more narrowly focused theory. However, it has prompted other researchers to utilize more complex statistical analysis methods to address these concerns (Gavazzi, 2011).

Another recent criticism of GST is that it obscures cultural influences on families. Although the theory certainly recognizes the importance and influence of inputs into the family system, it does not offer a specific process for how culture helps keep the family
in a steady state or moves it toward progressive mechanization. In the same vein but more generally, since GST emphasizes patterns and steady states, it often obscures giving appropriate attention to random or isolated changes or events that may be important or gives too much attention to seeming patterns where there really is none (Braithwaite & Baxter, 2006; Rosenblatt, 1994). Focusing on patterns may also obscure the importance of events that are not patterned or the importance of thoughts and feelings that are individual (Rosenblatt, 1994). In recent years, systems theory is being called on to integrate the role of genetics and neurobiology on behavior. Currently, very little work describes systems mechanisms or concepts related to these issues. Since GST started in biology, this particular area should be ripe for expansion. Likewise, the emphasis on boundaries may obscure the importance of family member inclusion within other systems and subsystems and the fluidity of family composition (Rosenblatt, 1994).

Two other criticisms specific to feminist theorists is that systems theory highlights the traditional notion of family through the hierarchy concept while obscuring the ability to place blame through nonsummativity. The implication is that Family Systems Theory, a specific extension of GST to family science, needs to be updated to better reflect a more modern notion of family acknowledging both equality and inequality in gender, race and other lifestyle variables. Although Von Bertalanffy provides a mechanism for placing blame, it is not often explicitly used, causing critics to argue that GST may obscure the placement of blame by implying a shared responsibility for example in violence between the victim and perpetrator (Braithwaite & Baxter, 2006).
A final limitation in applying GST to families with adolescents is that multiple problems including those technological and theoretical/philosophical arise from attempting to study systems as wholes. Some of these problems include the limitations of current mathematical knowledge and resulting linear research methods, the difficulty in sharing information across scientific fields and the challenges in changing foundational assumptions regarding the directions and mechanisms of causality into an understanding of interaction and organization leading to an adoption of new research methods facilitative to studying wholes.

Von Bertalanffy counters three main arguments against meta-theories such as GST. He said that GST provides: 1) a significant contribution that is more than just the fact that certain mathematics are applicable to various problems; 2) something of more value and meaning than mere analogy; and 3) an explanation in principle that is sufficient for a theory regarding highly complex phenomena (Von Bertalanffy, 1968).

Adolescent Risk Behavior

The adoption of a risk and protective factor framework as a unifying model for program development and practice is among the most important developments in delinquency and substance abuse prevention and intervention in recent years (SAMHSA CSAP, 2002). The framework currently used nationally is the bioecological-based risk and protective factors framework of Hawkins and Catalano which is based on Bronfenbrenner’s and Jessor’s work among others. This model suggests outcomes grow out of the complex web of interactions of various domains (SAMHSA CSAP, 2002). Additionally, these factors must be interwoven with the development process in which
certain factors may be more influential at key developmental points and often operate
differentially according to gender, race, ethnicity and culture.

In the 1990’s, Jessor’s Problem Behavior Theory became one of the most
influential overarching frameworks to explain dysfunction in adolescence (Steinberg &
Morris, 2001). “Problem-behavior theory is a systematic, multivariate, social-
psychological conceptual framework derived initially from the basic concepts of value
and expectation in Rotter's (1954, 1982) social learning theory and from Merton's (1957)
concept of anomie. The fundamental premise of the theory, all behavior is the result of
person-environment interaction, reflects a ‘field theory’ perspective in social science”
(Lewin, 1951)” (Costa, 2008, p.1). Problem behavior is defined as undesirable behavior
by social norms or laws and usually results in a type of social control (Costa, 2008). The
theory was developed in the early 1960s in a small, tri-ethnic community in southwestern
Colorado (Jessor, Graves, Hanson, & Jessor, 1968) and revised in the late 1960s for a
Richard Jessor and his colleagues have revised and extended the theory during the
intervening years (Costa, 2008).

Problem-behavior theory accounts for the increase in risk taking behavior in
adolescence and suggests that many risk behaviors are normal at certain ages (Jessor,
1991). Jessor proposes that true problem behavior is a syndrome where multi-problem
behaviors occur within the same youth. Some problem behaviors include: substance use,
delinquency, risky sexual activity and other dangerous or unhealthy behaviors such as
drag racing, driving under the influence of substance, etc. The most recent re-formulation
of the theory organizes the main constructs into the much-used risk and protective factors framework (Jessor, 1991). This reformulation retains the direct linkages of the constructs to behavior outcomes but adds a more comprehensive list of potential measures and moderating effects into the model (Costa, 2008). It includes models, controls and support protective factor types and models, opportunity and vulnerability risk factors which are general enough to apply to all adolescents (Jessor, 2008). Risk factors are neurobiological facts, stressful events or psychosocial factors that increase an adolescent’s vulnerability to poor outcomes (Gullotta & Adams, 2005). Protective factors help safeguard youth from poor outcomes.

The empirical base of Jessor’s theory is solid, having been tested numerous times by both Jessor and a variety of other researchers and most rigorously through longitudinal, national studies. A former federal Center for Substance Abuse Prevention director and top prevention researcher and intervention developer refers to this theory in a 2000 article on bridging the gap between research and practice, “As we have known for some time, problem behaviors tend to cluster in certain problem-prone youth (Jessor, 1993). For example, the National Household Survey data found high correlations between drug-abuse in youth and aggressive, violent, and delinquent behaviors” (Kumpfer & Kaftarian, 2000, p. 170). The results of another large, longitudinal study, The Pittsburgh Youth Study, on the development of youth problem behavior, “lend considerable support to Jessor’s problem behavior theory with many problem behaviors being associated with many other problem behaviors and with shared risk factors being linked to different manifestations of problem behavior” (Jessor, 1998, p. 135). Problem-
behavior theory has been used in both cross-sectional and longitudinal studies accumulating considerable evidence to support its generalizability for both male and female, younger and older adolescents and across socioeconomic status, culture and race/ethnicity (Costa, 2008).

Rather than defining risk behavior as deviant, theorists such as Jessor, Steinberg and others see risk-taking as adaptive behavior while others see risk-taking as a result of weak ties to conventional social norms (Hirschi, 1969) or modeling of unconventional behavior by parents, peers and other influential people in adolescents’ lives (Botvin & Schinke, 1997). These behaviors are thought to be adaptive in cases when they serve a social or developmental purpose such as separation from parents, gaining peer acceptance, or coping with failure or rejection. Some Social Capital theorists suggest that delinquent behavior is actually adaptive in some environments requiring criminal capital for survival (Jessor, 1998).

Of particular importance to adolescent development is that risk-taking behavior increases between childhood and adolescence and decreases between adolescence and adulthood. Steinberg provided compelling evidence that the remodeling of the dopaminergic pathways in the child brain as it emerges into adolescence is associated with sensation-seeking driven by changes in reward salience and sensitivity. He found that this sensation-seeking is not experienced by all adolescents in the same way, suggesting several factors that may moderate risk-taking behavior including: pubertal timing, opportunity and peer encouragement to engage in risk behavior and temperament. Steinberg suggested that the maturation of the cognitive control system that occurs
between adolescence and adulthood (specifically the structure and connections of the prefrontal cortex, cortical and sub-cortical systems) enables longer-term planning, better impulse control and less social and emotional reactivity all of which can act to reduce risk behavior. He also suggests there may be developmental changes in neurotransmission patterns that impact reward salience and reward-seeking. The implications of these findings are revolutionary for the fields of delinquency and adolescent substance abuse prevention.

Program evaluations have shown that environmental strategies have the greater impact among types of prevention programming, with family-based programming having the best outcomes for intervention. A particular example is that evaluation results from the Partnership for a Drug Free America, the national prevention media campaign, have shown that although messages targeted toward youth most often do not produce intended behavioral outcomes, messages targeted toward parents do (Romer, 2003). This is further support for Steinberg’s supposition that increased external constraints placed on adolescents by parents may contribute to a decrease in risk behaviors.

The Association of Delinquency, Substance Abuse and Mental Health Problems

Among the poor outcomes that result from multiple risk factors are adolescent behavioral health problems including externalizing problems that manifest through delinquency and substance abuse and internalizing problems that manifest through mental health issues. The juvenile justice and child welfare systems in the United States are especially impacted by behavioral health issues (Gavazzi et al., 2008). National estimates indicate that approximately one in five children and adolescents have a diagnosable
mental illness (SAMHSA, 2008). However, this is much higher among youth involved in the juvenile justice system. Some estimates are as high as 67% of youth in corrections and 46% of youth under probation supervision meeting the criteria for a serious emotional disorder. Literature also suggests that mental health problems often results in more serious sanctions compared to youth without mental health problems (Mulford et al., 2004; Gavazzi et al., 2008). With an issue this large, the importance of better understanding mental health and substance abuse issues in court-involved adolescent populations cannot be overstated.

However, when considering Problem Behavior Theory, it is not surprising that mental health problems and delinquent behavior frequently co-occur in adolescence. Substance abuse and dependence were found to be more frequently co-morbid with behavioral health problems than with substance use. However, conduct disorder and oppositional defiant disorder were strongly associated with all three (Merikangas & Avenevoli, 2000). The Virginia Twin Study of Adolescent Behavioral Development was conducted to measure the association between substance use, conduct disturbance and depression in 971 adolescent boys and girls. They found that the main direction of association was from conduct problems to substance use/misuse and from substance use/misuse to depression with genetic and the environmental factors of both family dysfunction and a deviant peer group mediating the association for both sexes. For girls, there was a significant genetic influence on all substance use in adolescence and in co-occurring depression as well as environmental factors. However, environmental factors played a larger role for boys (Silberg, 2003).
Recent advances in statistics have provided further information on these relationships. Joint trajectory analyses were used to compare delinquency and substance abuse over time showing they followed parallel courses (Sullivan & Hamilton, 2007). “Whether the relationship is sequential or reciprocal can be debated; it may be that the relationship follows different patterns in different groups of youth. It is clear, however, that delinquent behavior and substance use problems go hand in hand in adolescence” (Mulvey, Schubert, & Chassin, 2010, p. 3). The two behaviors are driven by common risk factors such as parental substance use disorders, disrupted family processes and environments, and shared dispositional risk factors (Mulvey, Schubert, & Chassin, 2010). Although reducing substance use is not a cure for delinquency, the importance of involving the family in any intervention effort is warranted. “It seems apparent that the dynamics of an adolescent’s family play a central role as a potential risk factor and are key to unlocking the mystery of how these two behaviors develop and continue for serious offenders” (Mulvey, Schubert, & Chassin, 2010, p. 11).

Factors Influencing the Onset of Delinquency

Delinquency and its corresponding DSM-IV diagnosis of Conduct Disorder for adolescents are influenced by a set of familial and personal factors with aggressive behavior also being part of the developmental course. Oppositional Defiant Disorder is often a precursor to Conduct Disorder, and Anti-Social Personality Disorder requires previous evidence of Conduct Disorder before age 15 (Wolfe & Mash, 2006; APA, 1994).
Moffitt (1993) has differentiated between life-course-persistent and adolescent-limited delinquency based on the age of onset, the anticipated trajectory of problem behavior and differing etiologies (Wolfe & Mash, 2006). The DSM-IV differentiates between early-onset and late-onset Conduct Disorder and specifies whether the disorder is mild, moderate or severe (APA, 1994).

The adolescent-limited pathway usually begins in adolescence and is thought to result in less serious forms of Conduct Disorder having a high rate of desistance (Wolfe & Mash, 2006). However, it is thought to be more prevalent. Research suggests that adolescent limited youth engage in few conduct problems in childhood and do not exhibit many of the biological predisposing or family precipitating risk factors of life-course persistent youth. Association with deviant peers (Wolfe & Mash, 2006) and social status seeking through delinquency (Moffitt et al., 2008) seem to be precipitating factors.

The life-course persistent pathway has an onset in early or middle childhood and is usually characterized by multiple and severe risk factors in the individual, family, school and peer domains (Moffitt et al., 2008). Life-course-persistent youth exhibit more frequent and more severe anti-social behavior (Hankin & Abela, 2005). Evidence that confirms these two subtypes comes from longitudinal studies in more than a dozen countries (Moffitt, 2003, 2006) and was found in both boys and girls (Moffitt et al., 2008). Developmental research indicates that life-course persistent delinquents can be identified at a very early age through aggressive incidents at home and school (Campbell, 1995). Indications at school entry were the inability to control aggressive behavior, the
lack of pro-social skills and the lack of positive relationships with parents, peers and teachers (Webster-Stratton & Taylor, 2001).

This pathway has the most negative long-term prognosis and has a high degree of continuity into adulthood (Wolfe & Mash, 2006). Due at least in part, to the process of accumulative risk, youth exhibiting problem behavior early have a poorer prognosis with respect to delinquency than those who initiate problem behavior later (Dishion, Capaldi, & Yoerger, 1999; Moffitt, 1993; Patterson, 1993). Associated accumulative risk factors include but are not limited to the following: Attention Deficit Hyperactivity Disorder (ADHD), difficult temperament, exposure to teratogens, birth complications, low SES, poor parenting and other contextual risk factors such as peer rejection, poor academic skills and involvement in a deviant peer group (Dishion et al., 1991; Patterson et al., 1992). These accumulative risks lead to maladaptive interactions with parents, family, peers and others (Wolfe & Mash, 2006). ADHD is the most common condition associated with behavior problems. Children with co-occurring Conduct Disorder and ADHD seem to participate in a greater variety of delinquent acts, more aggressive acts, and more violent offending in adulthood. Depression, anxiety, somatization, substance abuse and anti-social personality disorders also occur more frequently than chance in individuals diagnosed with Conduct Disorder (Wolfe & Mash, 2006).

Genetics and other neurobiological factors along with shared environmental factors help explain why Conduct Disorder and ADHD seem to cluster in families and be intergenerational. Heritability for childhood conduct disorder has been estimated at about 40 percent (Farrington et al., 2001). Disregulations in neural structures, pathways and
neurotransmitters that regulate and modulate cognition, behavior and affect are implicated in the development of antisocial behavior (Pihl & Nantel-Vivier, 2005). Prenatal brain development can be disrupted by exposure to teratogens including alcohol and drugs, or problems during birth may adversely impact the development of these systems. Additionally, normal neurobiological development can be disrupted by traumatic brain injury. Another important factor is temperament, thought to form the core of a child’s personality (Fox & Henderson, 1999), which is a major organizer of early social-emotional development and related to child outcomes. Many processes involving transactions between individuals and environment can potentially encourage or discourage continuity of temperament. For example, sensitive parents attuned to the needs of their child can overcome obstacles presented by children of difficult temperaments (Mangelsdorf & Frosch, 2000).

In 1992, Hawkins, Catalano and Miller identified several risk factors for childhood aggression most of which are within the family domain including: deficient family management practices involving lack of maternal warmth, inconsistent parenting, severe or permissive parenting, poor monitoring and unclear expectations of behavior; high levels of family conflict; low levels of warmth and involvement in parent-child relations; rejection by peers in the elementary grades; and association with deviant peer groups (Lochman van den Steenhoven, 2002).

The Influence of Disrupted Family Processes on Adolescent Behavioral Health

Behavioral health is one of the areas of adolescent risk that is particularly impacted by family processes. Families are thought to have both a direct and indirect
effect on the etiology of adolescent problem behavior (Dishion, 2000). Bronfenbrenner’s Ecological Systems Theory illustrates that all ecological domains contribute to child development in varying ways and in varying degrees (Bronfenbrenner & Evans, 2000). However, most research suggests that parents and peers in particular play important and interdependent roles in adolescent development (Jessor, 1998). The notion of the primacy of parental influence on child development began early in the 20th century with Freud and continued with attachment, modeling and parenting style research among others. Recently, the influences of other domains and the interrelationships between domains have come into the spotlight for consideration. The multi-causality and reciprocity of influences adds to the complexity of trying to separate out the distinct influences of parents and peers (Bussy & Bandura, 1999). These interactions are made even more complex by considering human agency.

However, there is considerable evidence that parenting practices are a primary influence in the etiology of adolescence substance use. Mechanisms of parental influences on adolescent substance use in the literature include bonding/attachment, modeling, parent-child conflict and parenting practices (Hawkins, Catalano, & Miller, 1992). The direct effect is through disrupted, chaotic and coercive parenting which co-varies with levels of antisocial behavior in childhood (Dishion, 2000). It is also these family process factors that impact the likelihood of adolescent delinquency (Gavazzi et al., 2008). “Adolescent decisions to use or refrain from drugs are influenced by a variety of social forces. Although each individual family variable may have only a small impact, we found that the constellation of family variables has a significant influence on
adolescent decisions to use drugs” (Bahr, Hoffmann, & Yang, 2005, p. 548). In particular, the constellation included parental attitudes, monitoring and bonding and sibling drug use as variables associated with adolescent drug use even after controlling for peers (Bahr, Hoffmann, & Yang 2005). Of these, some studies suggested that parenting practices may be especially predictive of adolescent delinquency (e.g., Patterson & Stouthamer-Loeber, 1984) and substance use. One study found that in almost all longitudinal studies, an effect of poor parenting practices measured prior to the onset of substance use (Dishion, Capaldi, and Yoerger, 1999). Among these poor parenting practices were lack of warm and caring relationships, harsh and inconsistent discipline including poor monitoring, negative communication patterns and chaotic environments including frequent family transitions (Dishion, Capaldi, and Yoerger, 1999). The next sections present information related to issues that disrupt family processes and may predispose, precipitate or contribute to adolescent behavioral health problems.

**Parent/Child Relationship**

A secure relationship between parent and child is considered a critical context for healthy emotional and social development (Kochanska, 2001). Parental bonding or support is defined as parental behaviors toward the child, such as praising, encouraging or giving affection which convey love to the child. Conceptually related terms include nurturance, affection, warmth, acceptance and open communication (Barnes et al., 2006). Attachment is a term used to describe how a child is bound to its parent. Secure attachment is thought to be related to child outcomes in that it promotes greater social
competence for more successful future relationships and therefore fewer behavioral health problems (Kochanska, 2001; Bretherton, 1992).

Parental warmth/support and control are two key constructs that are critically important in the parenting process and are viewed as common factors that influence multiple, co-occurring adolescent behaviors including substance use and delinquency. Early adolescence is a critical developmental period for studying bonding and parenting practices that influence the prevalence of adolescent problem behavior. During this period, biological changes combine with the social change of youth spending a greater portion of their time with peers to influence levels of family bonding (Dishion et al., 2002). There is empirical support for the combined effects of parental warmth/support and monitoring in buffering the adolescent from the negative effects of association with deviant peers and therefore reducing risk (Barnes et al., 2006).

However, while it may be best for an adolescent to have both high, parental warmth combined with good parenting practices, parental warmth is sufficient in most circumstances. A 2006 study concluded that maternal warmth moderated the link between harsh parenting and externalizing behaviors regardless of genetic similarity illustrating a definite environmental influence on externalizing behavior in children (Deater-Deckard et al., 2006). “In multiple studies, Wills and colleagues found parental support to be a protective factor for substance use arguing that support from parents is the glue that bonds adolescents to mainstream institutions and builds self-control” (Barnes et al., 2006, p.1085). These studies found that a close parent-child attachment in early adolescence was related to the development of conventional behavior such as increasing
responsibility and adherence to social norms which discouraged association with deviant peers (Barnes et al., 2006). In addition to this mediating role, parental support and communication also had an impact on the individual variables of self-control and competence that are directly related to lower risk of substance use (Wills, 2003). Also, the similar construct of family warmth or cohesion was found to be independently predictive of substance use (Coombs & Coombs, 1988).

Adolescent bonds with parents and other social institutions play important roles in both discouraging and facilitating risk behaviors such as drug and alcohol use. Social Control Theory suggests that strong ties to societal institutions such as family, school or work decrease the likelihood that individuals will engage in deviant behavior. When adolescents have a close relationship with their parents, they want to please their parents (Rankin & Kern, 1994; Wright & Cullen, 2001). However, when adolescents do not have a strong bond, they are not as likely to conform to their parents’ wishes and therefore more likely to experiment with drugs (Bahr, Hoffmann & Yang, 2005). Conversely, in families with poor parental role models, adolescent risk may be increased by modeling the parent’s behavior. For example, children whose parents use drugs or are drug dependent are more likely to use (Hawkins et al., 1992). According to Social Learning Theory, this may be due to individuals learning behavior in small, informal groups through imitation and reinforcement. In families where alcohol is used and attitudes toward use are favorable, the youth have a tendency toward alcohol use (Wills, Mariani, & Filer, 1996; Bahr, Hoffmann & Yang, 2005). Sutherland’s differential association theory (Sutherland, Cressey, & Luckenbill, 1992) adds the importance of frequency,
duration, intensity, and priority of social interactions to this model. According to this addition, adolescents acquire favorable attitudes toward drug use if they associate frequently with others who use drugs and have favorable attitudes. If these social interactions have a long duration, transferring of attitudes is more likely to occur. Since learning is also more likely to occur when interactions are intense, the most influential groups would be family and close friends (Bahr, Hoffmann, & Yang, 2005) with the family being the most influential due to it being the child’s first social group with the most frequent, early interactions and the longest duration of association (Bahr, Hoffmann, & Yang, 2005).

Because of the primacy of parent influence, parental alcohol abuse is also a potentially confounding variable when examining the effects of parenting on adolescent substance use and delinquency. The substance abuse of the parent may have both direct and indirect effects through lowering warmth and monitoring as well as through genetics (Barnes et al., 2006). Studies in this area suggest that bilineal parental substance abuse is associated with the greatest behavioral deviance among males prior to puberty and is associated with a greater risk for substance abuse (Moss et al., 1995). This is important because behavioral problems in childhood and early adolescence are among the most important predictors of drug use and delinquency (Jessor, 1998).

Children of parents with substance use disorders have increased rates of mental disorder reflective of psychological disregulation, including Conduct Disorder, ADHD, depression and anxiety disorders (Clark et al., 2005). As with substance abuse, relationships between parents and adolescents characterized by warmth and intimacy are
a protective factor against the development of early mental health problems (Crosnoe et al., 2002; Dekovic et al., 2004). This is true for both male and female children and adolescents. Although, it is generally agreed that females display more internalizing behaviors, and males display more externalizing behaviors (Dekovic et al., 2004). These effects are thought to be influenced by gender socialization exhibiting psychological symptoms that are thought to be socially acceptable behavior for their gender (Gavazzi et al., 2008).

Although parent-child bonding has consistently shown effects on child outcomes, “Dimensions of the social development model (e.g., relationships with parents, commitment to school, and pro-social values) differ between gender and racial groups, and that these differences may predict varying rates of offending and drug abuse” (Fishbein & Perez, 2000, p. 463). Gender and racial/ethnic differences for delinquency and substance use are well known. Serious, minority offenders consistently described their families as disrupted and full of conflict (Gorman-Smith, Tolan, Loeber, & Henry, 1998). However, the causes of these differences are still unknown. Possible explanations include “differential exposure to risk factors, differential responses to predisposing conditions, different risk factors altogether, or a combination of any of the above mentioned factors” (Fishbein & Perez, 2000, p.463).

Although racial differences were not selected as a focus in this dissertation, race is important for discussion and inclusion as a control variable due to the well-documented existence of minority over-representation at all stages of the juvenile justice system (Hsai, Bridges & McHale, 2004). This issue has received much national attention due to
the reduction of disproportionate minority contact with the juvenile justice system being one of the core mandates for all states receiving funding under the Juvenile Justice and Delinquency Prevention Act of 1974 as first amended to include this mandate in 1988 (Pope, Lovell & Hsia, 2001).

The Surgeon General’s 2001 report, Mental Health: Culture, Race and Ethnicity, discusses disparities in behavioral health services for members of racial and ethnic minority populations. The report posits that people in minority populations were less likely to have access to services and more likely to delay seeking treatment due to a number of cultural barriers. Although rates of mental disorders in most ethnic minority groups are similar to rates for Caucasians, lack of early intervention may result in more serious problems and an increase in involuntary commitments and other adverse consequences (U.S. Department of Health and Human Services, 2001). Externalizing problems were found to be similar across races with rates being higher among males. However, internalizing problems were higher for whites than for both African American male and females. Theories to explain these differences include identify, social and cultural differences (Rosenfield, Phillips & White, 2006).

A 2010 Monitoring the Future, a long-term, national, longitudinal study project, study found that among the three largest racial/ethnic groups in the U.S., white youth had the highest levels of substance use for all types of substances including all types of illicit drugs, alcohol and cigarettes. African-American youth had significantly lower use rates with Hispanic youth use rates generally falling between white and African-American youth except for higher rates than whites for some substances at younger ages (Johnston,
O’Malley, Bachman & Schulenberg, 2011). A 2011 literature review on racial and ethnic disparities in behavioral health services for youth upheld the findings of both the Monitoring the Future study and the Surgeon General’s report. Although African American youth have lower substance use disorder rates, they receive services less often (Alegría, Carson, Goncalves & Keefe, 2011).

**Parenting**

Families are thought to have a direct effect on the etiology of adolescent problem behavior through disrupted, chaotic and coercive parenting which co-varies with levels of antisocial behavior in childhood (Dishion, 2000). Social modeling in family and peers also influence the development of risk behaviors. A study using latent growth curve analysis supports findings that parenting significantly predicts adolescent drinking levels and misuse (Barnes et al., 2000).

Early adolescence is a critical developmental period for studying parenting practices that influence the prevalence of adolescent problem behavior. During this period, biological changes combine with the social change of youth spending a greater portion of their time with peers to influence levels of family bonding. Several studies have found that low parental supervision as an indicator of parental bonding, and low school bonds increase the risk for adolescent and adult drug and alcohol use (Fothergill & Ensminger, 2006, Lochman et al., 2002).

Good parenting practices are both responsive and respectful of the child yet set firm and consistent limits. Behavioral control attempts to regulate behavior through disciplinary strategies and supervisory functions involving monitoring, limit setting and
communicating that a behavior is unacceptable. Behavioral control is associated with demandingness, but psychological control is associated with intrusiveness (Barber et al., 2002). Psychological control attempts to shape behavior through manipulating thoughts, feelings and attachments involving the use of guilt, anxiety, love withdrawal, personal attacks, and constriction of verbal interaction (Barber et al., 2002). Parents who use psychological control focus on controlling the child’s thoughts, emotions and feelings, resulting in the child feeling unacceptable as a person and without autonomy (Roger et al., 2003). Parent behaviors found to be related to psychological control were possessiveness, protectiveness, nagging, negative evaluation, strictness and punishment (Barber et al., 2002). Psychological control is linked to negative developmental outcomes including internalizing mental health problems such as depression and low self-reliance as well as externalizing problems like delinquency and aggression (Roger et al., 2003). These negative outcomes are more likely when both parents are high in psychological control (Roger et al., 2003). The bidirectional nature of parenting and child behavior (Kandel & Wu, 1995) has become well known to researchers with poor child behavior evoking less positive parenting as well as the opposite (Lochman et al., 2002).

Three basic types of parenting styles have been identified including authoritative, authoritarian and permissive. The goal of an authoritative parenting style is to develop the child’s reasoning and thinking skills. It offers and encourages open communication and individual responsibility. Authoritarian parents are strict, generally inflexible and usually hold children’s behavior to a set standard. A permissive parenting style adopts a non-punitive, accepting and affirmative manner toward their child. Permissive parents make
few demands, ask for little responsibility and allow the child to regulate their behavior as much as possible (Baumrind, 1966). Both the authoritarian and permissive parenting styles were found to be less effective in promoting healthy development than authoritative parenting. Baumrind suggested that both these styles may act to limit children from the opportunities to engage in necessary vigorous interaction with people. Too little or too many demands, conflicts, standards, opportunities for negotiation may alternately deprive the child of learning experiences necessary to successfully navigate in society (Baumrind, 1966).

In keeping with these findings on parenting styles in general, a study using National Longitudinal Study of Youth 1997 data found that having a resident father with an authoritarian or permissive parenting style was associated with an increased risk of engaging in delinquent activity and substance use. However, two-way interaction models indicated that these negative effects were reduced when fathers had a positive relationship with their adolescent. In a meta-analysis of 63 studies, Amato and Gilbreth (1999) found that the contribution of nonresident fathers’ good parenting practices were stronger in predicting child well-being than other structural aspects of nonresident fathering such as financial support (Coley & Medeiros, 2007). These findings taken together indicate that both father warmth and parenting practices are important in influencing adolescent outcomes (Bronte-Tinkew, Moore & Carrano, 2006).

Due to differences in the temperament of children, discipline strategies that match the personality and developmental needs of the child are the most effective. Research suggests that the process of discipline is interactive. Children are more responsive to
discipline that corresponds to their level of cognitive, social, emotional and moral development, and therefore more responsive to discipline that they consider fair and deserved (Turiel, 2006). Research has identified three types of parental practices regarding discipline and moral development including: induction, power assertion and love withdrawal. Induction entails the communication of reasons and explanations for requested or proscribed behavior and discussions about the effects of the child’s action on others. Power assertion entails physical punishment or threats of physical punishment and deprivation of privileges or items. Love withdrawal entails disapproval and the removal of affection or emotional supports. Induction is more positively correlated to moral development where external regulation by a parent or parental figure shifts to internal regulation that results in the child being able to conform to societal standards and refrain from antisocial behavior even in the absence of authority (Turiel, 2006). However, parents sometime resort to types of power assertion discipline such as corporal punishment. Baumrind cited the consensus of a scientific conference on corporal punishment which defined corporal punishment as open-handed administered to the extremities, not causing physical injury and with the purpose of changing behavior (Baumrind, Larzelere, & Cowan, 2002). This definition sets corporal punishment apart from abuse.

Abuse has been definitively found to cause internalizing and externalizing problems in children across a wide variety of socio-cultural groups (Deater-Deckard et al., 2006). Any parenting strategy is more effective and less detrimental within the context of a warm, loving relationship between parent and child (Turiel, 2006 and
Deater-Deckard et al., 2006). One study found that high maternal warmth was a systematic and powerful moderator of the effects of physical punishment and externalizing problems. “The link between harsh parenting and child externalizing problems is strongest when the mother—child relationship lacks warmth. This result is consistent whether the mother and child are genetically similar, thus ruling out passive gene-environment correlation as an explanation” (Deater-Deckard et al., 2006, p. 59).

The literature reports a fairly consistent relation between abuse or maltreatment and delinquency. Multiple, longitudinal, prospective studies have shown that victims of child maltreatment were more likely to be involved in delinquent behavior as well as have other behavioral health problems (Wiig et al., 2003). The factors most strongly related to persistent delinquency, included not living with both biological parents, caretaker’s unemployment and maltreatment (Stouthamer-Loeber, Homish, & Loeber, 2002).

Parental monitoring is defined as “a set of correlated parenting behaviors involving attention to and tracking of the child’s whereabouts, activities, and adaptations” (Dishion & McMahon, 1998, p. 61). It is a relational skill that facilitates parental awareness of a child’s activities or control and communication of concern or warmth for the child (Dishion, 2003). The foundation of effective parental monitoring is a positive parent and child relationship. There are consistent and robust findings that youth who are monitored less have higher levels of problem behavior (Crouter & Head, 2002). One study found that parental monitoring accounted for the most variance in delinquency when compared with parental discipline, problem solving and reinforcement (Crouter & Head, 2002). The more children self-disclose to their parents and the more parents notice,
listen and are involved with their children, the less likely they were to be delinquent. Additionally, indirect monitoring seen as overseeing and being aware of children’s activities was more likely to increase the child’s social competence (Crouter & Head, 2002). The level of monitoring can also be related to being raised in a single-parent family with less parental supervision and exposure to parents or friends who use substances (Barkin, Smith & Durant, 2002). Additionally, poverty and marital discord are thought to indirectly affect developmental outcomes such as substance use problems by increasing parental stress and thereby decreasing the quality of parenting generally (Fothergill & Ensminger, 2006; Dishion, 2000).

Another explanation for the emergence of problem behavior and substance use for high-risk youth is through accumulated risk. The history of problem behavior, marginal peer relations, and poor school achievement initiates a cycle of unmanageable behavior and/or delinquency among adolescent friendship groups. In early to middle childhood, oppositional children can experience negative reactions from parents, teachers and peers. The incorrigibility of these adolescents results in frustrated parents who give up trying to communicate with their child and manage their behavior. This mutual disengagement process disrupts parent/child bonding. As social bonds and academic progress weaken, adolescents become even more susceptible to deviant peer group influences. The increasingly powerful influence of peer social reinforcement in conjunction with the lack of adult involvement, poor communication, and monitoring sets up an environmental cycle which reinforces problem behavior. By adolescence, this trajectory results in the heightened risk of substance use, delinquency and school failure (Dishion, 2003).
Intergenerational Influences

All the family factors discussed previously in this chapter are correlated, so they do not represent independent processes. Since parental substance use, genetics, parenting styles, parenting strategies, family structure and life events are related, a transactional approach incorporating mediating and buffering effects holds promise in better understanding the influence of parents on child and adolescent outcomes (Wills, 2003). Two of the areas of research that stand out in this area are the intergenerational transmission of criminality and substance abuse.

A familial concentration of criminal activity has been discovered and confirmed. Fewer than 10% of the families in any community account for more than 50% of that community’s criminal offenses. This could be explained by genetic influences, shared environment influences or gene-environment interaction effects (Moffitt, 2005). Evidence for environmental influences includes the finding that the more time an antisocial father lived with the family, the more harmful effects were present in the children including aggression (Moffitt, 2005). One study using a life-course perspective based on data from the Rochester Intergenerational Study found significant levels of intergenerational continuity of antisocial behavior between parents and their children who have high levels of contact (Thornberry, Freeman-Gallant & Lovegrove, 2009). Depressive symptoms were found to be a consistent mediator of this continuity. They found both direct and indirect influences. Other factors that were found to be mediators included high levels of stress and parenting behavior.
Drug abuse also runs in families (Martin et al., 1994; Moss et al., 1994). A number of twin studies have provided evidence that genetic factors play a major role in the familial aggregation of substance use and abuse for a variety of substances including nicotine, caffeine, tranquilizer, sedatives, cannabis, and cocaine. These studies found moderate heritability for frequency of use and use of numerous substances (Jang et al., 1995).

The literature focusing on the gene-environment interactional influences of parents on adolescent substance use clearly identifies parental substance use and substance disorders as a risk factor for adolescent substance use and disorders. Neither genetics nor environment is solely responsible for producing individual variation, so that almost all traits show interaction (Merikangas & Avenevoli, 2000). Despite huge advances in understanding human genotypes, the application of this knowledge to the study of individual and family risk factors is complicated by the complex interactions through which genes are expressed in an individual. Genetic effects on complex behaviors may be indirect being filtered through the influence of environmental factors (Wills & Yagger, 2003). However, this difficulty has not stopped researchers from developing statistical techniques to estimate the heritability of risk such as substance abuse and dependence. These studies “demonstrate that a family history of substance abuse is one of the most potent risk factors for the development of substance abuse among exposed offspring” (Merikangas & Avenevoli, 2000, p. 814).

Another genetically influenced risk factor for the development of substance use disorders in youth is the existence of mental health disorders (Clark et al., 2005).
Internalizing mental health disorders are highly co-morbid with substance abuse and dependence while externalizing disorders such as Conduct Disorder and Oppositional Defiant Disorder were strongly associated with substance use, abuse and dependence. “The risk for substance abuse was more than two times greater than the risk for use and the risk for dependence was more than four times greater than the risk for use in the presence of any psychiatric disorder” (Merikangas & Avenevoli, 2000, p. 814). A Yale study revealed that social phobia and bipolar affective disorder were causally linked to the development of substance dependence. However, panic disorder, major depression, and substance use disorders result in part from shared familial risk factors with participants often reporting use of alcohol or drugs to self-medicate for their anxiety or depression (Merikangas & Avenevoli, 2000).

One striking finding was that shared environmental factors like living in a home where drugs were available through family members or friends influenced illicit drug use and abuse behaviors in adolescence (McGue, Elkins & Iacono, 2000). Evidence suggests that males may be more strongly influenced by shared environmental factors than females. The Virginia Twin Study of Adolescent Behavioral Development was conducted to measure the association between substance use, conduct disturbance and depression in 971 adolescent boys and girls. “Although conduct disturbance and depression were moderately associated with substance use, the pattern of genetic and environmental risk differed for males and females and across the two disorders. Genetic factors were predominant in girls’ substance use whereas boys’ use was mediated
primarily by shared environmental factors reflecting family dysfunction and deviant peers” (Silberg et al., 2003, p. 664).

Rationale for Data Analysis Plan

One of the primary limitations of the behavioral health literature discussed in this chapter is that in general, it does not specify influences by gender, race or culture. I believe the dearth in this area of social science research is one of the reasons that broad-based substance abuse and delinquency prevention and treatment interventions for adolescents often fail to achieve their desire outcomes. What works differs by gender, age, race, culture and even context. Keeping the importance of context and interaction in mind, another limitation is that almost all the research in behavioral health is done using a single perspective or even analyzing multiple perspective data as if it were not related.

Dyadic data analysis techniques have not been commonly used in social psychological research (Sansone, Morf & Panter, 2004). However, in the last decade these techniques have found their way into the literature on business and organizational development. A 2006 article by University of Michigan and Harvard business school faculty found that dyadic data analysis consistently performed better than individual data in accounting for corporate political behavior. “We show that system-level analyses, by aggregating potentially significant information, provide a less grounded account of the relations across networks than do dyadic analyses” (Mizruchi & Marquis, 2006, p. 187).

A paper on dyadic data analysis presented by Noel Card from the University of Arizona at the 2009 biennial meeting of the Society for Research in Child Development
discussed how this is a new approach in developmental science. Challenges to its widespread application are that the methods are statistically complex and largely unknown to reviewers of journals, grants and conference presentation proposals (Card, 2009). However, Card argued that despite the challenges, family researchers should consider dyadic analysis as a potentially valuable opportunity to advance the understanding of childhood issues, and that the field cannot continue to rely only on methods assuming independence (Card, 2009).

In a review of Kenny, Kashy and Cook’s 2006 book on *Dyadic Data Analysis*, Chris Coryn from the Evaluation Center at Western Michigan University, declared the work as one that changed his views at the most basic level about research design and data analysis. He saw the techniques outlined in the book as having great potential in opening new ways of thinking about data across disciplines and subject matters. He pointed out that dyadic data analysis principles may be most appropriately applied to systems theory and other research which were primarily concerned with relationships (Coryn, 2007).

The advances in statistical methods and more specifically in structural equation modeling (SEM) approaches provide a much needed way to study complex interactions and break these interactions down by various demographic factors. As economic times worsen, I believe research that is able to build on previous literature to provide specific findings that inform behavioral health practice will be an increased area of focus for both federal and state government. This study is an effort to address gaps in the literature by utilizing these techniques.
Chapter 3: Methods

Overview

This chapter provides methods for the present study as well as touches on methods of the Gavazzi et al. (2008) study when appropriate. It provides an overview of how the data were collected and characteristics of the sample population. The analytic procedure section of this chapter discusses confirmatory factor analysis on the instrument subscales used in this study as well as provides details of model development, testing of equivalent models, trimming and model fit. All statistical procedures were completed using PASW v18 and AMOS v18.

This study involves an examination of family risk factor impact on behavioral health risks by gender among court-involved youth from both parent and youth perspectives.

Sample

The analysis was conducted on a sample of court-involved youth from five Ohio counties (Erie, Franklin, Middletown, Pickaway and Summit) over a five-year period from January 2005 to July 2009. The sample contained 324 males (65.5%) and 171 females (34.5%). The age of youth ranged from 11 to 17 years old with an average age of 15 years. The sample was 64.4% White non-Hispanic, 26.9% African American and 8.6% other minorities.
The sample cases were selected from the entire data set of several thousand administrations gathered using the Global Risk Assessment Device (GRAD) 1.0. The selection criterion was all youth administrations that had at least one complete matching parent/guardian administration. Due to various agency policies, only five counties in Ohio made use of the ability of the GRAD to collect multiple perspectives.

<table>
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<th>Male</th>
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<th>%</th>
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<tr>
<td>Franklin</td>
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<td>5.9</td>
</tr>
<tr>
<td>Middletown</td>
<td>94</td>
<td>19.0</td>
</tr>
<tr>
<td>Pickaway</td>
<td>88</td>
<td>17.8</td>
</tr>
<tr>
<td>Summit</td>
<td>171</td>
<td>34.5</td>
</tr>
</tbody>
</table>

Table 1 Demographic Characteristics of Sample Youth
The sample used in the Gavazzi et al. (2008) study included a total of 2,646 Ohio youth ranging in age from 13 to 17 (mean=15.24, SD=1.32). There were more males (1,637) than females (1,009).

Instrument

The measures in this study were gathered through use of version 1.0 of a 132-item assessment instrument called the Global Risk Assessment Device (GRAD version 1.0: Gavazzi et al., 2003). The GRAD is an internet-based instrument that assesses potential threats to the numerous developmental needs of court-involved adolescents. The instrument was administered as part of the standard assessment procedure by trained line staff working in one of the five counties’ detention, probation, or intake/diversion departments. The juvenile justice professionals administering the GRAD participated in six hours of training prior to assessing any youth. These professionals also had access to on-going telephone technical assistance by GRAD trainers as part of continuous quality control efforts. The GRAD system worked through a secure, online connection encrypting the data that flowed between the user’s Internet browser and the GRAD secure data center. Data protocols ensured that clients only had access to their own data, and this version of the GRAD did not allow the entry of unique, personal identifiers into the system. The GRAD took approximately 20 minutes with another five minutes to answer demographics. Questions were read to the youth and entered into the database by the justice professional.

The GRAD is made up of eleven domain areas of risk/needs including: prior offenses, family/parenting issues, deviant peer relationships, substance abuse, traumatic
events, mental health issues, psychopathy, sexual activity and other health-related risks, leisure activities, accountability and education/work issues. Respondents were asked to respond to the items by indicating on a scale of 0–2 (where 0 indicates No/Never, 1 indicates Yes/A couple of times, and 2 indicates Yes/A lot) how much each item applies to their lives. Item scores were totaled to compute a risk score for each domain. All items from all domains of the GRAD are provided in Appendix A. The GRAD has the capacity to collect information from multiple perspectives (youth, parent, professional) when possible throughout the case management process. In all previous studies, only data collected from the youth’s perspective were analyzed.

Evidence for the psychometric properties of the GRAD has been demonstrated in studies that found the hypothesized factor structure, high internal reliability (Gavazzi et al., 2003), and evidence of concurrent validity with other well-established measures of risk factors (Gavazzi & Lim, 2003). There is also evidence of predictive validity for referring youth to an appropriate level of care (Gavazzi et al., 2003); and studies have demonstrated gender and race/ethnicity differences (Gavazzi et al., 2008; Gavazzi et al., 2005; Gavazzi, 2006; Gavazzi et al., 2006).

Scales from three domains of the GRAD, family/parenting issues, behavioral health and substance abuse along with demographic information were used for data analysis procedures in both the Gavazzi et al. (2008) article and this current study.

An IRB exemption was granted for studies using this version of GRAD because users did not have the ability to enter personal identifying information about the youth being assessed. The GRAD was usually administered at the court or detention center’s
first contact with a juvenile for use in making case handling and adjudicatory recommendations.

Measures

Subscales in three domains of the GRAD including family/parenting issues, behavioral health issues and substance abuse in addition to demographic information were utilized in Intraclass correlation and model testing procedures in the current study.

For the SEM analysis, only family conflict (11 items) and parental tip-toeing activities (four items) sub-domains were used from the family domain as a result of exploratory and confirmatory factor analyses which made use of polychoric correlations (Flora et al., 2003) due to ordinal measured variables (i.e., a response to each item is on a three-point scale where 0 indicates No/Never, 1 indicates Yes/A couple of times, and 2 indicates Yes/A lot).

Internalizing problems and externalizing problems were used as indicators of behavioral health. The internalizing indicator is comprised of 10 items and externalizing of six items. Seven items in the substance abuse domain were used. Items regarding disruptive behaviors caused by substance abuse in the domain were excluded due to the focus on disrupted family processes.

Disrupted Family Processes

This domain contained 17 items that focus attention on disrupted family processes. For the Gavazzi et al. (2008) and present studies, only family conflict (11 items), and parental tip-toeing activities (four items originally and two after data trimming) sub-domains were included in the data analysis procedure as a result of
exploratory and confirmatory factor analyses. The financial hardship (two items) sub-domain was excluded from the present study because it was excluded from the Gavazzi et al. (2008) study due to the items being more related to family structure rather than family process. The final items in the family conflict domain and parental tip-toeing domain are provided in Table 2.

| Family Conflict                                                                 |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| 1. How often do you get into fights with adults who live in your home?         |
| 2. How much of the time do the adults who live with you NOT know where you are?|
| 3. Are family members ever too critical of you?                                |
| 4. Do you ever feel that you are not welcome to stay in your home?             |
| 5. Are you ever at-risk of harm, or are you ever in physical danger when you are in your home? |
| 6. When you are punished for your behavior, is it harsh (the punishment is worse than the behavior) or inconsistent (the punishment is never the same twice for the same behavior)? |
| 7. How often have you been involved in a physical fight (shoving, hitting, punching etc.) with an adult family member as a result of something you did wrong? |
| 8. How often are adults who live in your home verbally abusive to you (swearing, calling you names etc.)? |
| 9. How often do you fight with your brothers and sisters?                      |
| 10. Does your relationship with your mother ever feel not so good?             |
| 11. Does your relationship with your father ever feel not so good?             |

| Parental Tip-Toeing                                                          |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| 2. Does it ever seem like your family members tip-toe around you (so they don’t upset you)? |
| 3. Do your family members ever seem to go out of their way to NOT upset you?    |

Table 2 Items Used from the GRAD Family Domain—Youth Version

Mental Health

Both internalizing and externalizing problems were used as indicators of mental health for the Gavazzi et al. (2008) and the present study. The internalizing behavior indicator scale was comprised of 10 items. The externalizing behavior indicator scale
contained six items. See Table 3 for a complete list of internalizing and externalizing items.

<table>
<thead>
<tr>
<th>Internalizing Behavior Items</th>
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</thead>
<tbody>
<tr>
<td>1. Do you have bad dreams or nightmares?</td>
</tr>
<tr>
<td>2. Do you have difficulty sleeping?</td>
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<tr>
<td>3. Have you lost interest in things you used to enjoy?</td>
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<tr>
<td>4. Do you feel sad, moody, blue or depressed?</td>
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<tr>
<td>5. Do you feel like you can’t trust anyone?</td>
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<tr>
<td>6. Have you experienced a major change in appetite (either increase or decrease)?</td>
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<tr>
<td>7. Do you have panic attacks?</td>
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<tr>
<td>8. Do you have difficulty breathing, pain in your chest, or it feels like your heart is pounding too much?</td>
</tr>
<tr>
<td>9. Have you felt like you were physically numb to pain?</td>
</tr>
<tr>
<td>10. Do you feel like you don’t belong anywhere because of the color of your skin or the family you come from?</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Externalizing Behavior Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you have difficulty controlling your anger?</td>
</tr>
<tr>
<td>2. Do you try to get even with people when they do something to you?</td>
</tr>
<tr>
<td>3. Do you destroy things that belong to you when you get angry?</td>
</tr>
<tr>
<td>4. Do you yell, shout or curse too much?</td>
</tr>
<tr>
<td>5. Have you threatened to harm people?</td>
</tr>
<tr>
<td>6. Have you been physically aggressive towards others?</td>
</tr>
</tbody>
</table>

Table 3 Items Used from the GRAD Mental Health Domain—Youth Version

Substance Abuse

For substance abuse, seven items of the substance abuse domain were used in the model. In the Gavazzi et al. (2008) and present studies, items regarding disruptive behaviors caused by substance abuse were excluded since the main focus was to examine the relationship among disrupted family processes, internalizing problems, externalizing problems and actual substance abuse. Items used in the substance abuse domain is the item, are provided in Table 4.
### Substance Use Items

<table>
<thead>
<tr>
<th>1. Have you ever drank alcohol?</th>
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</thead>
<tbody>
<tr>
<td>2. Have you ever used marijuana?</td>
</tr>
<tr>
<td>3. Have you ever smoked or chewed tobacco?</td>
</tr>
<tr>
<td>4. Have you ever used “club drugs” (ecstasy), acid or other psychedelic drugs?</td>
</tr>
<tr>
<td>5. Have you ever sniffed glue, aerosol sprays, or other inhalants?</td>
</tr>
<tr>
<td>6. Have you ever used legal drugs for non-medical reasons?</td>
</tr>
<tr>
<td>7. Have you ever used highly addictive drugs (crack, cocaine, heroin)?</td>
</tr>
</tbody>
</table>

Table 4 Items Used from the GRAD Substance Abuse Domain—Youth Version

### Analysis

The analyses were completed in phases beginning with data cleaning, checking for normality assumptions and factor structure integrity with this study sample. Then, descriptive analyses, model development and trimming, and finally Structural Equation Modeling (SEM) analyses were conducted.

### Data Preparation

Before performing the SEM analyses, the data were tested for assumptions of normality, linearity and homoscedasticity with frequency distributions, histograms, tests of normality (i.e., skewness and kurtosis), normal probability plots, scatter plots, bivariate correlations and boxplots. The distribution of the scale scores was expected to be skewed to the right as a function of the nature of assessing risk with higher risk being less likely than lower risk. Correlation analysis and scatter plots were used to determine linearity. Homoscedasticity was tested for dependent variables with boxplots.

### Descriptive Analyses

Descriptive analyses were performed to determine the characteristics of sample youth. Reliability analyses of family/parenting and behavioral health GRAD domains
performed to provide evidence the scales performed well with the current studies’ sample using Cronbach’s alpha.

The hypothesis that perspective matters was first tested by determining the similarity of parent and child scores using the Intraclass Correlation to determine relative homogeneity within dyads in relation to the total variation. A paired samples t-test was also used to test for differences in the youth versus parent perspective scale scores.

_Model Development & Testing_

In the Gavazzi et al. (2008) study, two competing models were tested regarding the relationships among disrupted family processes and behavioral health outcomes. The first hypothesis that was tested said the “disruptive family processes will have significantly positive association with both mental health and substance use in a juvenile delinquent population with the supposition that the associations will be stronger for females than for males” (Gavazzi et al., 2008, p. 1074). The second hypothesis tested a competing model that mental health would mediate the association between family factors and substance use for both males and females “such that the significant and positive association between disruptive family processes becomes smaller in magnitude when internalizing and externalizing problem behaviors are used as intermediary factors” (Gavazzi et al., 2008, p. 1074).

The data in the Gavazzi et al. (2008) study were analyzed with LISREL 8.3. The first model specified one exogenous latent variable and three endogenous variables. The equivalence of the loadings in the disrupted family processes construct was tested first. Then, the equivalence of the path coefficients across gender was tested. The baseline
model was evaluated without any constraint. All model fit indices of the baseline model indicated a good fit with a RMSEA of .02. The indicators loaded significantly on disrupted family processes for both genders. Next, the model was assessed with factor loadings constrained to be equal for both groups. This model also showed a good fit, and also showed invariance of factor loadings (Gavazzi et al., 2008). Finally, the test for invariance of factor loadings and measurement error variances also produced a good fit. However, the chi-square difference test showed that males and females differed significantly in their measurement error variance.

The hypotheses for this study were that perspective matters; disrupted family processes from the adolescent perspective would be a stronger indicator of youth mental health (i.e., internalizing problems and externalizing problems) and substance abuse than from the parent perspective; and that these associations will be stronger for females than for males.

A multiple group structural equation modeling (SEM) procedure using maximum likelihood estimation in AMOS was used to test the hypotheses predicting the relationship among disrupted family processes, mental health issues, and substance abuse and to detect possible gender differences (Kenny et al., 2006). The initial theory-driven model was tested then modified based on the results of statistical tests. Equivalent models were also tested to determine if other similar models provided a greater model fit than the original theory-derived model.

This study utilized SEM as the primary analytic tool for several reasons including that it can reflect variable relationships at both the individual and dyadic levels; models
can include latent variables that do not measure a construct directly; and measurement error of observed variables can be estimated.

Observed variables were used with the parent/child dyad as the unit of analysis. The initial conceptual model specified two exogenous observed variables (gender and race) and one endogenous latent variable (disrupted family process) with the indicator variables of family conflict and parental tip-toeing predicting the three observed endogenous variables of internalizing problems, externalizing problems and substance use concurrently.

The current study tested models of the parent and youth perspective individually and then with both perspectives correlated. The model consisted of variances and covariances among the observed variables with the means and variance of the same variable for the two partners constrained to be equal. Disturbances were correlated. This original model was then modified by dropping two items in the Tip-Toeing subscale due to result of the modification indices computed in AMOS to improve goodness of fit. The decision was made to re-specify the model in this manner based on the knowledge that the Intraclass correlation for this subscale was substantially below the threshold for consequential non-independence at 0.28, and the Cronbach’s alpha was only 0.43.

To determine measurement invariance by gender a baseline chi-square value was computed to determine model fit for the whole sample. Also, each group was tested to determine if the model provided an acceptable fit for each gender. These findings provided a baseline for testing measurement invariance across groups. Then loadings were set equal and a chi-square difference test was performed to determine whether the
model lost fit with the constraint. This process was repeated to determine whether the model was more predictive for female problem behaviors than male problem behaviors.

Race was used as a control variable in the models tested. Race was selected for inclusion due to the well documented existence of minority over-representation at all stages of the juvenile justice system (Hsai, Bridges & McHale, 2002).

The proposed full dyadic SEM model is provided in Figure 1. The conceptual models (see Figure 2) of the Gavazzi et al. (2008) study asserted that disrupted family processes were a strong indicator of behavioral health (i.e., internalizing problems and externalizing problems) and substance abuse among court-involved youth (i.e., Model A). This first model specified one exogenous latent variable and three endogenous variables with disrupted family processes predicting internalizing problems, externalizing problems and substance use concurrently. Since the mediation model (Model B) did not hold, it was not used in this multiple perspectives analysis.
Figure 1 Full Dyadic SEM Model
Figure 2 Gavazzi et al. (2008) Study’s Conceptual Models
Chapter 4: Results

This chapter provides findings of the present study and how results extend the findings of the Gavazzi et al. (2008) study. This study compares parent versus child perspectives in examining how disrupted family processes influence adolescent behavioral health and substance use. The influence of disrupted family process was also tested for gender differences. Previous analysis of data from the same instrument as used in this analysis yielded a gender by family interaction in a racially diverse sample of court-involved adolescents (Gavazzi, 2006).

The first section of this chapter discusses data preparation procedures. The second section provides descriptive statistics; while the last section discusses results of Structural Equation Modeling (SEM) using the four salient domains of the GRAD.

Data Preparation

Before performing analyses, the data were screened for missing and invalid values and scale items were summed to result in total scale scores. Only GRAD administrations that had a matching parent/guardian administration were selected, and only the first administration was selected for inclusion if the GRAD was administered more than one time. After data cleaning, the data set was modified to allow dyadic modeling by combining both youth and parent/guardian data on the same data line.

After the final data set was prepared for analysis, assumptions of normality, linearity, and homoscedasticity were checked for all totaled scale scores and
demographics. More specifically, frequency distributions, histograms, tests of normality (i.e., skewness and kurtosis), normal probability plots, scatter plots, bivariate correlations and boxplots were reviewed. As expected, the distribution of the scale scores were skewed to the right normally as a function of the nature of assessing risk with higher risk being less likely than lower risk. Correlation analysis and scatter plots determined the assumption of linearity was upheld.

Then, the data were checked for consequential non-independence. An Intraclass correlation test was conducted on observed adult and youth scales to determine relative homogeneity within dyads in ratio to the total variation. The Intraclass correlations presented in Table 5 reflect consequential non-independence for all scales except tip-toeing due to the correlations being above 0.45.

<table>
<thead>
<tr>
<th>Scale</th>
<th>ICC (Single Measures)</th>
<th>ICC (Average Measures)</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internalizing</td>
<td>.480</td>
<td>.649</td>
<td>.000</td>
</tr>
<tr>
<td>Externalizing</td>
<td>.545</td>
<td>.706</td>
<td>.000</td>
</tr>
<tr>
<td>Substance Use</td>
<td>.729</td>
<td>.843</td>
<td>.000</td>
</tr>
<tr>
<td>Conflict</td>
<td>.535</td>
<td>.697</td>
<td>.000</td>
</tr>
<tr>
<td>Tip-Toeing*</td>
<td>.275</td>
<td>.431</td>
<td>.000</td>
</tr>
</tbody>
</table>

*Scale before data trimming

Table 5 Interclass Correlations for GRAD Scale Totals
Descriptive Statistic Analyses

To explore the characteristics of the sample, descriptive analyses including means, standard deviations and ranges of all scale totals from both the adult and youth perspectives were conducted. A notable feature of the means of these scales are that all youth scales have a larger mean compared to their paired adult scale except Tip Toeing. This indicates that generally youth self-reported greater problems in these areas than their parent/guardian reported. A summary of these are presented in Table 6.

<table>
<thead>
<tr>
<th></th>
<th>Family Conflict Adult</th>
<th>Family Conflict Youth</th>
<th>Family TipToe Adult</th>
<th>Family TipToe Youth</th>
<th>Internalizing Adult</th>
<th>Internalizing Youth</th>
<th>Extern-</th>
<th>Extern-</th>
<th>Sub</th>
<th>Sub</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>495</td>
<td>495</td>
<td>495</td>
<td>495</td>
<td>495</td>
<td>495</td>
<td>495</td>
<td>495</td>
<td>495</td>
<td>495</td>
</tr>
<tr>
<td>Mean</td>
<td>4.65</td>
<td>5.8</td>
<td>1.97</td>
<td>1.83</td>
<td>3.46</td>
<td>5.62</td>
<td>3.6</td>
<td>4.39</td>
<td>2.23</td>
<td>2.63</td>
</tr>
<tr>
<td>Std. Error of Mean</td>
<td>0.189</td>
<td>0.192</td>
<td>0.099</td>
<td>0.076</td>
<td>0.171</td>
<td>0.19</td>
<td>0.154</td>
<td>0.144</td>
<td>0.126</td>
<td>0.123</td>
</tr>
<tr>
<td>Median</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Mode</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Variance</td>
<td>17.635</td>
<td>18.197</td>
<td>4.835</td>
<td>2.866</td>
<td>14.524</td>
<td>17.808</td>
<td>11.77</td>
<td>10.20</td>
<td>7.885</td>
<td>7.512</td>
</tr>
<tr>
<td>Skewness</td>
<td>0.903</td>
<td>0.761</td>
<td>1.061</td>
<td>0.963</td>
<td>1.282</td>
<td>0.739</td>
<td>0.862</td>
<td>0.542</td>
<td>1.367</td>
<td>1.221</td>
</tr>
<tr>
<td>Std. Error Skewness</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
<td>0.11</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>0.14</td>
<td>-0.136</td>
<td>0.205</td>
<td>0.544</td>
<td>1.214</td>
<td>-0.043</td>
<td>-0.261</td>
<td>-0.527</td>
<td>1.237</td>
<td>1.305</td>
</tr>
<tr>
<td>Std. Error Kurtosis</td>
<td>0.219</td>
<td>0.219</td>
<td>0.219</td>
<td>0.219</td>
<td>0.219</td>
<td>0.219</td>
<td>0.219</td>
<td>0.219</td>
<td>0.219</td>
<td>0.219</td>
</tr>
<tr>
<td>Range</td>
<td>19</td>
<td>20</td>
<td>8</td>
<td>8</td>
<td>18</td>
<td>19</td>
<td>12</td>
<td>12</td>
<td>13</td>
<td>13</td>
</tr>
</tbody>
</table>

Table 6 Descriptive Statistics of GRAD Scale Totals

To explore internal consistency of scales with both adult and youth respondents Cronbach’s alphas and correlation coefficients for all study scale totals were calculated. These are displayed in Table 7. All study scales evidenced acceptable levels of reliability with the study sample according to the generally accepted level of sound reliability (i.e.,
coefficient values of 0.7 or higher). Cronbach’s alpha for the disrupted family processes domain was 0.81 in the Gavazzi et al. (2008) study and 0.72 for both adult and youth for this study.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Cronbach's Alpha</th>
<th>Correlation Between Forms</th>
<th>Spearman-Brown Coefficient</th>
<th>Guttman Split-Half Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Conflict Adult</td>
<td>Part 1 - .724</td>
<td>.707</td>
<td>.828</td>
<td>.789</td>
</tr>
<tr>
<td></td>
<td>Part 2 - .615</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Conflict Youth</td>
<td>Part 1 - .724</td>
<td>.707</td>
<td>.828</td>
<td>.789</td>
</tr>
<tr>
<td></td>
<td>Part 2 - .615</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Tip Toe Adult*</td>
<td>Part 1 - .579</td>
<td>.731</td>
<td>.845</td>
<td>.843</td>
</tr>
<tr>
<td></td>
<td>Part 2 - .677</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Tip Toe Youth*</td>
<td>Part 1 - .302</td>
<td>.455</td>
<td>.626</td>
<td>.625</td>
</tr>
<tr>
<td></td>
<td>Part 2 - .348</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internalizing Adult</td>
<td>Part 1 - .704</td>
<td>.757</td>
<td>.861</td>
<td>.845</td>
</tr>
<tr>
<td></td>
<td>Part 2 - .640</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internalizing Youth</td>
<td>Part 1 - .752</td>
<td>.758</td>
<td>.863</td>
<td>.843</td>
</tr>
<tr>
<td></td>
<td>Part 2 - .635</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Externalizing Adult</td>
<td>Part 1 - .721</td>
<td>.782</td>
<td>.878</td>
<td>.877</td>
</tr>
<tr>
<td></td>
<td>Part 2 - .776</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Externalizing Youth</td>
<td>Part 1 - .677</td>
<td>.730</td>
<td>.844</td>
<td>.844</td>
</tr>
<tr>
<td></td>
<td>Part 2 - .729</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substance Use Adult</td>
<td>Part 1 - .723</td>
<td>.730</td>
<td>.844</td>
<td>.823</td>
</tr>
<tr>
<td></td>
<td>Part 2 - .505</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substance Use Youth</td>
<td>Part 1 - .694</td>
<td>.712</td>
<td>.832</td>
<td>.730</td>
</tr>
<tr>
<td></td>
<td>Part 2 - .416</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Prior to data trimming

Table 7 Reliability Statistics of GRAD Scale Totals

Confirmatory factor analysis techniques were also conducted in AMOS for each scale. The results varied by scale and by perspective with the internalizing scale providing the best fit indices, and the substance use scales providing the least indication of goodness of fit. In general, the youth perspective data provided a better fit than the adult perspective for the individual scales. This was expected due to the GRAD originally
being designed primarily for administration with youth. These results are provided in Table 8.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Chi square</th>
<th>DF</th>
<th>RMSEA</th>
<th>GFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Conflict Adult</td>
<td>499.5</td>
<td>90</td>
<td>.096</td>
<td>.877</td>
</tr>
<tr>
<td>Family Conflict Youth</td>
<td>381.1</td>
<td>90</td>
<td>.081</td>
<td>.903</td>
</tr>
<tr>
<td>Internalizing Adult</td>
<td>145.5</td>
<td>35</td>
<td>.080</td>
<td>.940</td>
</tr>
<tr>
<td>Internalizing Youth</td>
<td>87.0</td>
<td>35</td>
<td>.055</td>
<td>.967</td>
</tr>
<tr>
<td>Externalizing Adult</td>
<td>93.2</td>
<td>9</td>
<td>.138</td>
<td>.935</td>
</tr>
<tr>
<td>Externalizing Youth</td>
<td>33.0</td>
<td>9</td>
<td>.073</td>
<td>.976</td>
</tr>
<tr>
<td>Substance Use Adult</td>
<td>170.5</td>
<td>14</td>
<td>.150</td>
<td>.905</td>
</tr>
<tr>
<td>Substance Use Youth</td>
<td>178.2</td>
<td>14</td>
<td>.154</td>
<td>.898</td>
</tr>
</tbody>
</table>

*Family Tip Toe Scales were trimmed to only two items
Table 8 Fit Statistics of GRAD Scale Totals

Structural Equation Model Testing

The results of the Gavazzi et al. (2008) study’s multiple group SEM found that disrupted family processes were significantly associated with higher levels of internalizing problems, externalizing problems and substance abuse for both genders. However, they found that disrupted family processes were more related to internalizing problems and substance abuse in females. “This model suggested that 54% of the variance in internalizing problems, 31% of the variance in externalizing and 64% of the variance in substance abuse could be explained by the disrupted family processes in the female group, while 45% of the variance in internalizing problems, 42% of the variance in externalizing problems, and 46% of the variance in substance abuse could be explained by the disrupted family processes in the male group” (Gavazzi et al., 2008, p. 1078).
The Gavazzi et al. (2008) study supported family processes playing a central role in adolescent adjustment variables associated with behavioral health factors but in different ways for each gender. “Together, the findings underscore the primacy of the family’s impact on issues related to adolescent development and well-being in tandem with the need for a more gender sensitive approach to the needs of court-involved males and females” (Gavazzi et al., 2008, p. 1078).

For the present study, SEM model fit indices for the individual perspective models and the dyadic model are illustrated in Table 9. The models depicted in these figures were estimated using maximum likelihood estimates in the AMOS 18.0 Software Package. The squared multiple correlation values for the dyadic model are provided in Table 11.

<table>
<thead>
<tr>
<th>Model</th>
<th>Chi square</th>
<th>DF</th>
<th>RMSEA</th>
<th>GFI</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Youth→Youth All</td>
<td>30.8</td>
<td>10</td>
<td>.065</td>
<td>.984</td>
<td>.975</td>
</tr>
<tr>
<td>Male</td>
<td>19.3</td>
<td>10</td>
<td>.054</td>
<td>.984</td>
<td>.981</td>
</tr>
<tr>
<td>Female</td>
<td>22.4</td>
<td>10</td>
<td>.086</td>
<td>.966</td>
<td>.960</td>
</tr>
<tr>
<td>Adult→Adult All</td>
<td>29.0</td>
<td>10</td>
<td>.060</td>
<td>.984</td>
<td>.987</td>
</tr>
<tr>
<td>Male</td>
<td>28.5</td>
<td>10</td>
<td>.076</td>
<td>.975</td>
<td>.981</td>
</tr>
<tr>
<td>Female</td>
<td>12.8</td>
<td>10</td>
<td>.040</td>
<td>.980</td>
<td>.993</td>
</tr>
<tr>
<td>Full Dyadic→ All</td>
<td>118.3</td>
<td>44</td>
<td>.058</td>
<td>.966</td>
<td>.974</td>
</tr>
<tr>
<td>Male</td>
<td>99.4</td>
<td>44</td>
<td>.062</td>
<td>.956</td>
<td>.970</td>
</tr>
<tr>
<td>Female</td>
<td>78.6</td>
<td>44</td>
<td>.068</td>
<td>.939</td>
<td>.963</td>
</tr>
</tbody>
</table>

Table 9 Fit Statistics for SEM Models

The full dyadic model produced the best model fit (root mean square error of approximation (RMSEA) of .058) of the three models tested for the total sample and was therefore selected as the model to test gender differences. The model fit indicator of
RMSEA of 0.05 or below indicates a close fit, while 0.08 to 0.05 indicates a reasonable fit and above 0.10 indicates a poor fit (Browne and Cudeck, 1992).

The data indicated there was a significant difference in adult versus youth perspective on behavioral health risk. The results of paired t tests showed there was a significant difference at the $p < .01$ level in the scores of parents and youth regarding all three behavioral health indicators with parents consistently reporting fewer problems than youth. When the parent and youth perspectives were tested in separate models to determine which model fit the behavioral health indicators, the separate perspectives had similar overall fit indices with an RMSEA of .065 for youth and an RMSEA of .060 for adults which are acceptable fits. However, the model fits were different by gender with the youth perspective providing an acceptable fit for males (RMSEA of .054) but not females (RMSEA of .086), and the adult perspective providing a good fit for females (RMSEA of .040) and an acceptable fit for males (RMSEA of .076).

The dyadic model also yielded an interesting finding regarding race. The only outcome variable that race significantly predicted was substance use from both perspectives. The association was negative showing that in this sample, minority youth were less likely than white youth to have higher substance use risk levels from both the youth and parent perspectives. This was expected and is in keeping with the literature than whites tend to have the highest substance use rates. There are also other potential explanations for this finding. One possible explanation could be the more rural nature of the counties from which the sample was taken. These counties do not have high minority youth populations, so minority families living in more rural counties may be
substantively different from minority families living in more urban counties. Also, substance abuse among white youth in rural areas has increased in recent years, and for certain substances, rural youth have use rates that surpass their urban counterparts (Lambert, Gale & Hartley, 2008).

To test for gender differences, multiple group analysis was conducted using the best overall fitting model, the dyadic model. The first step was to test the common model without constraints which yielded a chi-square of 178.1 with 88 df. The next step was to test the factor loadings for invariance. This was accomplished by setting the loadings of the latent variables equivalent across the sexes and by setting the paths from the latent variables to race equivalent. There was no loss of fit with a chi-square of 185.7 and 94 df. The chi-square difference between the common model and the model testing for invariance of factor loadings as 7.6 with six df and was non-significant.

Since the factor loadings were found to be invariant, the next step was to keep these paths equivalent and then test the model making the paths to each of the outcomes equivalent. When the paths to externalizing were set equivalent, the chi-square was 205.2 with 104 df with a chi-square difference of 19.5 with eight df which was significant at \( p < .01 \).

Because the chi-square difference was significant, the paths from disrupted family processes to externalizing behaviors cannot be considered equivalent for males and females. Because the path to externalizing was not invariant, these constraints were removed and the paths to internalizing were set to equivalent. This resulted in a chi-square of 198.5 with 104 df. Compared to the last model that showed equivalence, the
measurement model, the chi-square difference was 12.8 with eight df which was not significant. Since these paths were invariant, the constraints to internalizing were retained and the paths to substance abuse were also set to be equivalent. The chi-square was 203.6 with 108 df, which compared to the last equivalent model of internalizing was not significant with a chi-square difference of 5.1 with four df. The error variances were also set to equivalent resulting in a chi-square of 235.9 with 120 df. When compared to the last equivalent model of substance abuse, it was not significant.

These results indicate that the paths for male and female court-involved youth from disrupted family processes to internalizing and substance abuse are equivalent while the strength of the relationship between disrupted family processes and externalizing behaviors is higher for males.

<table>
<thead>
<tr>
<th>Model</th>
<th>Tested</th>
<th>Chi square</th>
<th>df</th>
<th>RMSEA</th>
<th>Chi square Difference</th>
<th>df Difference</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>--</td>
<td>178.1</td>
<td>88</td>
<td>.046</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>Factor Loadings</td>
<td>185.7</td>
<td>94</td>
<td>.044</td>
<td>7.6</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>Externalizing path</td>
<td>205.2</td>
<td>104</td>
<td>.044</td>
<td>19.5</td>
<td>8</td>
<td>*</td>
</tr>
<tr>
<td>III</td>
<td>Internalizing path</td>
<td>198.5</td>
<td>104</td>
<td>.043</td>
<td>12.8</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>Substance use path</td>
<td>203.6</td>
<td>108</td>
<td>.042</td>
<td>5.1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>Error Variances</td>
<td>235.9</td>
<td>129</td>
<td>.044</td>
<td>32.3</td>
<td>21</td>
<td></td>
</tr>
</tbody>
</table>

Table 10 Multiple Group Model Results

Results of the estimates also provided useful findings. In both the full dyadic model and the individual models with each perspective predicting their own outcome responses, disrupted family process significantly predicted all three outcomes. The squared multiple correlations provide information about how much total variance the
factors account for in the observed variables. Generally, across the tested models, $R^2$ values indicated that disrupted family processes accounted for the most variance in externalizing problems for males and internalizing problems for females. Also, the $R^2$ values for the adult model and the dyadic model were higher than for the youth model. There was a significant (at the $p<.05$ level) increase in the $R^2$ values when the adult perspective variables for disrupted family process was added to stepwise regression models for each outcome from the youth perspective indicating that using both perspectives explained more of the variance in the outcome variables.

<table>
<thead>
<tr>
<th>Full Dyadic Model Squared Multiple Correlations</th>
<th>All Estimate</th>
<th>Male Estimate</th>
<th>Female Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Externalizing adult</td>
<td>.644</td>
<td>.705</td>
<td>.589</td>
</tr>
<tr>
<td>Externalizing youth</td>
<td>.865</td>
<td>1.111</td>
<td>.578</td>
</tr>
<tr>
<td>Internalizing adult</td>
<td>.619</td>
<td>.639</td>
<td>.619</td>
</tr>
<tr>
<td>Internalizing youth</td>
<td>.862</td>
<td>.943</td>
<td>.573</td>
</tr>
<tr>
<td>Substance use adult</td>
<td>.314</td>
<td>.330</td>
<td>.301</td>
</tr>
<tr>
<td>Substance use youth</td>
<td>.294</td>
<td>.263</td>
<td>.354</td>
</tr>
</tbody>
</table>

Table 11 SEM Estimates for Full Dyadic Model

<table>
<thead>
<tr>
<th>Squared Multiple Correlations for Standardized Externalizing Path Estimates</th>
<th>Male Estimate</th>
<th>Female Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Externalizing adult</td>
<td>.663</td>
<td>.660</td>
</tr>
<tr>
<td>Externalizing youth</td>
<td>.919</td>
<td>.941</td>
</tr>
<tr>
<td>Internalizing adult</td>
<td>.616</td>
<td>.651</td>
</tr>
<tr>
<td>Internalizing youth</td>
<td>.800</td>
<td>1.031</td>
</tr>
<tr>
<td>Substance use adult</td>
<td>.327</td>
<td>.311</td>
</tr>
<tr>
<td>Substance use youth</td>
<td>.287</td>
<td>.312</td>
</tr>
</tbody>
</table>

Table 12 Standardized Externalizing Path Estimates
<table>
<thead>
<tr>
<th>Correlations for Externalizing Path Model</th>
<th>Male Estimate</th>
<th>Female Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disrupted Family Process-Youth Perspective → Disrupted Family Process-Adult Perspective</td>
<td>.796</td>
<td>.835</td>
</tr>
<tr>
<td>Disrupted Family Process-Adult Perspective → Race</td>
<td>-.228</td>
<td>-.225</td>
</tr>
<tr>
<td>Disrupted Family Process-Youth Perspective → Race</td>
<td>-.249</td>
<td>-.230</td>
</tr>
</tbody>
</table>

Table 13 Correlations for Externalizing Path Model

<table>
<thead>
<tr>
<th>Squared Multiple Correlations By Perspective</th>
<th>Adult</th>
<th>Youth</th>
<th>Dyadic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Externalizing adult</td>
<td>.652</td>
<td>.589</td>
<td></td>
</tr>
<tr>
<td>Externalizing youth</td>
<td>.616</td>
<td>.578</td>
<td></td>
</tr>
<tr>
<td>Internalizing adult</td>
<td>.670</td>
<td>.619</td>
<td></td>
</tr>
<tr>
<td>Internalizing youth</td>
<td>.561</td>
<td>.573</td>
<td></td>
</tr>
<tr>
<td>Substance use adult</td>
<td>.319</td>
<td>.301</td>
<td></td>
</tr>
<tr>
<td>Substance use youth</td>
<td>.319</td>
<td>.354</td>
<td></td>
</tr>
</tbody>
</table>

Table 14 Squared Multiple Correlations
Chapter 5: Discussion

Summary

The purpose of this study was to extend the body of knowledge concerning influences on delinquency by using parent versus child perspectives in examining how disrupted family processes may influence adolescent behavioral health and substance use. Specific research in this area is particularly important because the outcomes of even the best designed prevention interventions have moderate impacts on desired outcomes. The lack of success is not surprising in that most of these interventions are based on theories derived from research using only a parent or child perspective and without taking the influence of family factors into account. This study seeks to provide a more balanced picture of how family factors influence youth behavioral health.

This point of view is very much in keeping with the Ecological Systems Theory (EST) person-process-context-time model of environmental influences. This study was built on the assumptions that there are multi-directional influences within and between the various systems outlined by EST. The person or individual in the middle of the EST model was taken into account by using risk scores from the youth perspective and by testing for gender differences. The next contextual environment in order of most directly influential to the individual in the EST model is the family. The family was taken into account by including parent/guardian perspective of risk and by including the latent variable of disrupted family processes into the tested models. Context was also taken
into account by controlling for race. The process component of EST takes into account
the individual in interaction which was tested by using dyads as the unit of analysis.
Although great care was taken in attempting to apply the person-process-context-time
model correctly, this study did not include all necessary elements as with most studies
using Bronfenbrenner’s theory (Tudge, Mokrova, Hatfield & Karnik, 2009). Further
dyadic data analysis is called for to directly measure parent and child interaction, to
include contextual variables which are described in the limitations section of this chapter,
and to track the influence of disrupted family processes from multiple perspectives over
time.

Hypotheses

The main hypothesis proposed in this study is that perspective matters when
examining family factors that impact behavioral health and substance use in adolescent,
court-involved populations. This hypothesis was tested by comparing the different
perspectives. The hypothesis that perspective matters was upheld. There was a significant
difference in the scores of adults and youth regarding all three behavioral health
indicators and the family conflict scale with parents consistently reporting fewer
problems than youth except in the Tip Toeing items.

The second hypothesis that disrupted family processes from the adolescent
perspective would be a stronger indicator of mental health (i.e., internalizing problems
and externalizing problems) and substance abuse among court-involved youth than
disrupted family processes from the parent perspective was not upheld. The parent and
youth perspectives tested separately provided similar model fits overall. The full dyadic
model produced the best model fit for the total sample of all models tested. In both the full dyadic model and the individual models with each perspective predicting their own outcome responses, disrupted family process significantly predicted all three outcomes. Further, there was a significant increase in explained variance when the adult perspective on disrupted family processes was added to the youth perspective.

The Gavazzi et al. (2008) study’s hypothesis for the model that was upheld was that family factors impact both mental health and substance use in adolescent populations, with the supposition that these associations may be stronger for females than for males. This study extends this hypothesis by testing assessment data collected from multiple perspectives to provide further insight into these gender differences. The last hypothesis in the current study was that the association of disrupted family processes to behavioral health risk would be stronger for females than for males. This hypothesis was not upheld. Instead, the multiple group analysis results indicated that the paths for male and female court-involved youth from disrupted family processes to internalizing and substance abuse were equivalent while the strength of the relationship between disrupted family processes and externalizing behavior was higher for males.

Just as in the current study, the Gavazzi et al. (2008) study found that disrupted family processes were significantly associated with higher levels of internalizing problems, externalizing problems and substance abuse in both male and female youth. However, unlike the current study which found that disrupted family processes were operating differently for males than for females regarding externalizing problems, the Gavazzi et al. (2008) study found that disrupted family processes were operating
differently related to internalizing and substance abuse problems in females. Although these findings are different, they are not contradictory. The Gavazzi et al. (2008) study found that data collected from only the youth perspective indicated that disrupted family processes operated differently for females on internalizing and substance use, while the current study using both adult and youth perspectives found that disrupted family processes operated differently for externalizing behaviors for males. These studies together provide compelling evidence that disrupted family processes may influence behavioral health outcomes differently by gender. Also, taken together these findings underscore that youth versus adult perspectives on assessments may yield valuable differences by gender. This multiple perspective data analysis upheld the Gavazzi et al. (2008) findings of family processes playing a central role in adolescent adjustment variables associated with behavioral health risk.

Limitations

Some limitations of this study include that the sample consisted of court-involved youth from only five counties in Ohio, limiting the application of results to non-court-involved youth, and youth from other geographic regions. The policies of the various agencies and offices using the GRAD limited the availability of GRAD assessments with matching youth and parent/guardian administrations. This resulted in a sample from more rural counties and from counties which may have a pre-existing bias toward valuing family-centered practices. Also, the data was cross-sectional so only associations were possible to ascertain.
Another limitation was the type of offense bringing the juvenile to court was not available, so the type and severity of offenses could not be taken into account. Also, offense history was not available, so prior court contact also could not be examined. The lack of offense history along with not examining the age of the offender may confound the results of this study. In keeping with Moffitt’s theory on pathways to delinquency, younger court contact may indicate the presence of more and/or more serious risk factors than youth coming into contact with the court at an older age. Additionally, the importance of perspective in risk assessment may differ for younger youth compared to older adolescents. The type (parent, guardian, grand-parent, etc.) and gender of the adult completing the assessment was not available and may be important in understanding the predictive power of different perspectives in assessment.

A limitation regarding administration of the instrument itself was that juvenile justice professionals supervised administration of the GRAD. These justice system professionals may not have had advanced training in behavioral health or conducting psychosocial assessments, and therefore may have unduly influenced the results in some way.

Further, family structure characteristics linked to adolescent risk behavior were also not available. This is a particularly important limitation due to the theoretical importance of environment influencing behavioral health under the EST framework. The influence of family structure on delinquency has become a central topic of criminology partially due to the growth of single-parent and other non-traditional families in recent decades (Barkin, Smith & Durant, 2002, Oetting & Donnermeyer, 1998). Many studies
indicate that being raised in a single-parent family is a risk factor for delinquency and other behavioral health issues. One explanation of the mechanism driving this risk factor is that single parents are more likely to have less resources including money, time and energy (Eitle, 2006). Female-headed households are at greater economic disadvantage and exhibit more inconsistent monitoring and discipline. Although single father households may be more effective at controlling child delinquency than female-headed households, single fathers communicate less with their children than single mothers. Generally this results in single mothers being more successful at establishing and maintaining affective bonds and encouraging interpersonal skills (Eitle, 2006).

Longitudinally, family stressors were found to be associated with increases in both internalizing and externalizing problem behaviors as well as lower academic achievement with problems increasing steeply with more than three family stressors (Forehand et al., 1998). The literature has documented the substantial impact of communication patterns, support, conflict and stressors such as separation and divorce (Gavazzi, Wasserman, Partridge, & Sheridan 2000a). Because of these differences, not having data on parental gender, marital status, living situation, family transitions and income level, limits the understanding of how disrupted family processes may influence behavioral health in different family settings.

Also, traumatic life events such as parental unemployment, accidents, illness or death have also been associated with adolescent risk for substance abuse and are correlated with adolescents association with deviant peers (Wills, 2003). Although
trauma was a domain collected by the GRAD, it was not included in this analysis and may have shed further light into gender differences in outcomes.

Another omission from this study concerns including mesosystem connections between children, families, peers, neighborhoods, etc. Recent research using the National Longitudinal Study of Adolescent Health found that although community social capital does not predict individual violence, family social capital did (De Coster et al., 2006). The notion of social capital refers to a variety of social resources originating in the socially structured relations that connect individuals to families and to other groups (Coleman, 1990). In less advantaged community and family settings, parents who lack social capital are less able to provide opportunities to their children (Jessor, 1998). The concentrated social and economic disadvantage found in poor neighborhoods is thought to undermine the formation of social capital (Coleman, 1988). Social Disorganization Theory suggests that communities with less cohesive or poorly connected social structures diminish the development of pro-social norms and encourage the development of risk behavior, including substance use (Wilson & Donnermeyer, 2006). The lack of neighborhood, community connection or SES variables in the current study limits the generalizability of the findings because disrupted family processes may operate differently in various types of family cultures.

Implications

While every aspect of child development is important and therefore needs to be better understood, disrupted family processes stand out as having a large potential effect on public policy and the allocation of public resources because of their correlation with
adolescent behavioral health. The findings of this study underscore the importance of gathering both youth and parent/guardian perspectives in assessing behavioral health risk. Although highly correlated, adult and youth perspectives may offer different information necessary to provide a more complete picture of adolescent behavioral health risk. This is valuable since many juvenile court jurisdictions use only the adolescent perspective when assessing adolescents for risk level, making pre-disposition recommendations and intervention planning. Also, many behavioral health agencies that conduct psychological assessments for juvenile courts only consider the youth perspective in conducting psychosocial assessments. These court decisions can alter the course of the adolescent’s life by withholding or facilitating needed early intervention services that may prevent exacerbation of behavioral health problems.

A 1992 study using data from the Rochester Youth Development Study examined similar concepts to this dissertation. Their study published in the Journal of Quantitative Criminology examined both adolescent and parent perceptions of how family members interacted and tested their perceptions related to official and self-reported delinquent behavior (Krohn, Stern, Thornberry & Jang, 1992).

The 1992 study found that both parent and adolescent family process measures significantly predicted self-reported and official delinquency. Parent perspectives explained more of delinquency measured by official data while the adult and adolescent perspectives predicted self-reported delinquency about equally. Both perspectives significantly explained self-reported adolescent delinquency with the parent perspective highlighting the importance of attachment and involvement, while the adolescent
perspective emphasized the role of attachment and control. Study authors offered a potential explanation for differences in the predictive power of different perspectives. They suggested that the parent perspective on disrupted family processes may be more effective in recognizing more serious delinquency which would be more likely to resort in court contact. The predictive power of the adolescent perspective only was only about half compared to the predictive power of using both perspectives. Although both theory and research recognize the importance of family relationships in explanations of delinquency, most research has only used youth perspective data distorting our current understanding in this area. “Because family processes obviously involve the interaction of children and their parents, perceptions of parents could shed additional light on the relationship between family processes and delinquency” (Krohn, Stern, Thornberry & Jang, 1992, p. 304).

“Both contribute significantly to the explanation of delinquency, and these two data sources provide distinct pictures of what takes place in the family. The findings reported here suggest that the typical absence of parental data in studies of delinquency may have led to an underestimation of the impact of family processes in the explanation of self-reported delinquency and an even greater underestimation for official delinquency. The methodological strategy of using multiple informants clearly has advantages in the study of adolescent delinquency” (Krohn, Stern, Thornberry & Jang, 1992, p. 309).

These findings also have implications for public policy in juvenile justice. The federal government promotes family-centered practice in child welfare through the Child
and Family Service Review program, among others. However, there is no such federal push for juvenile justice entities to integrate family-centered strategies such as conducting comprehensive family assessments into their protocols for assessing youth. It is clear that this study upholds the added benefit of including both the parent and child perspectives in making determinations about what is occurring within families and what interventions may be most beneficial in achieving the outcomes desired by the courts.

Because it appears that disrupted family processes may influence adolescents differently by gender, having access to information from both parents/guardians and youth may provide critical clues to selecting the most appropriate interventions. The finding from the Gavazzi et al. (2008) study that disrupted family processes accounted for more variance in internalizing risk for females, and the finding from the current study that disrupted family process accounts for more externalizing risk for males calls for more attention to gender specific programming. Some researchers suggest that these gender differences may be due to the differential effects of family factors beyond the influence of traditional gender roles (Dakof, 2000, Gavazzi et al., 2008). For example, family factors may play a particularly significant role in female delinquent behavior through trauma due to their greater exposure to physical and sexual abuse (Rhodes and Fischer, 1993). Trauma-informed care and specialized treatment is indicated for adolescents with assessments showing these types of histories. Using multiple perspectives will afford a greater chance of at least one family member offering this type of sensitive information.
The pathway that appears repeatedly in research findings is that family-related factors underlie early deviant behavior and later, substance abuse follows. One large study supporting this finding was conducted by the Center for Substance Abuse Prevention using SEM analysis of the pathways to drug use in a sample of 8,500 high-risk youth from 47 programs. The magnitude of these findings calls for implementing evidence-based family interventions to improve family relations (Kumpfer & Kaftarian, 2000). There is evidence that the earlier the intervention is offered, the greater the prevention effect on delinquency and drug abuse (Taylor & Biglan, 1998).

Recommendations for Future Research

Dyadic data analysis methods offer a useful tool for future research in this area, because these methods can help elucidate differences and similarities in parent versus child perspectives on various aspects of disrupted family process. Understanding what impacts differences and similarities in behavioral health outcomes is vital to developing better prevention and treatment interventions, better public policies and guiding the allocation of scare resources.

Since the pathways to adolescent substance abuse and delinquency are varied and influenced by a complex web of factors, the lack of success of non-comprehensive, single-focused intervention programs is not surprising (Romer, 2003). What compounds this complexity is the lack of a comprehensive strategy for prevention and intervention at either the federal or state levels (Romer, 2003). However, there are a variety of empirically-tested best practice and model interventions that integrate knowledge from developmental theories to successfully promote resiliency and/or address risk factors in
high-risk adolescent populations. Almost all of the most effective interventions focus on family processes. A meta analysis that studied specific interventions that were effective in reducing the two behavioral health diagnoses most closely associated with delinquency (oppositional defiance disorder and conduct disorder), included Multi-Systemic Family Therapy, Behavioral Systems Family Therapy, Functional Family Therapy and Parent Management Training/Cognitive-Behavioral Problem Solving Skills Training (Gullotta & Adams, 2005). Likewise, the interventions found most effective in reducing substance abuse included two family-oriented therapies (Gullotta & Adams, 2005). In this meta-analysis, family therapies significantly reduced recidivism among institutionalized delinquents compared to control groups that received only individual-type therapies (Gullotta & Adams, 2005). Unfortunately, family therapies targeted to populations at high risk for, or already exhibiting behavioral health problems are generally more expensive than universal prevention programs targeted to youth at all levels of risk ($23,269 compared to $12,347) (SAMHSA, 2007). However, for high risk youth, this increased cost is justified when considering the economic costs to society for substance abuse and justice system involvement (Shamblen & Derzon, 2009). Cost-benefit analyses of effective family interventions need to be conducted so that courts can better understand the cost savings and impact of the investment in family-related therapies.

Funding from the 1974 Juvenile Justice and Delinquency Prevention Act and its subsequent reauthorizations have promoted an increase in the community-based, delinquency prevention and intervention programs for adolescents (Gullotta & Adams, 2005). Although programs are now available, they may not be the right programs to meet
the needs of the individual adolescents. There is a dearth of multiple-perspective, objective assessment instruments that are appropriately predictive for court-involved youth. This area is wide open for development, and new instruments could be validated and tested for predictive power by implementing them in conjunction with court-based processes and research-based interventions already shown to provide positive outcomes. Better assessments would help promote more tailored programming to maximize improved outcomes for youth.

Conclusions

Having worked in both the behavioral health and justice systems for the past 16 years in two very different states, I am of the opinion that family science can only truly move forward with a bifurcated top down and bottom up approach. Although there has been much progress in documenting the interrelationships among problem behaviors, little progress has been made in identifying the specific developmental processes influencing problem behavior and then, in developing interventions to address these processes. I believe these aims can be accomplished through providing specific, adequate funding for longitudinal, scientifically rigorous studies of pathways to delinquency and substance abuse in diverse populations. As a companion approach, I believe a grass roots effort also needs to be funded. Regional research teams of participant-observers conducting qualitative research as they practice in various settings with various populations could help promote infusing science into the field as nothing else could while simultaneously bringing a depth and richness of focus to inform national and state research agendas.
These findings uphold previous research regarding the importance of disrupted family processes in predicting behavioral health risk in court-involved youth and that significant differences in risk exist by gender. The differing predictive power of both the youth and parent perspectives calls for more family-centered assessment processes and interventions since the results seem to indicate that parents/guardians of court-involved youth are uniquely suited to help facilitate their children’s improved well-being.
References


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Appendix A: Global Risk Assessment Device items for all domains - Youth version
Responses for the items:
- No evidence/No concern (0)
- Some evidence/Some concern (1)
- Strong evidence/Major concern (2)

Prior Offenses (5)
- Has this youth come to the attention of law enforcement for their behavior or for a delinquent offense?
- Has this youth participated in any kind of illegal activity that did NOT involve law enforcement?
- Has this youth made a formal appearance in court (appeared for a court date before a judge or magistrate)?
- Has this youth made an informal appearance in court?
- Does this youth have a history of prior detention?

Family/Parenting (16)
- Are any adults in the home in conflict with this youth?
- Do adults in the home have difficulty in keeping track of this youth?
- Is this youth not welcome to stay in the family home?
- Is this youth at-risk of harm or in eminent physical danger if they remain in the home?
- Do adults have to come down hard on this youth (i.e. harsh punishment)?
- Do physical altercations result between adults in the home and this youth as a result of the youths’ misbehavior?
- Do adults in the home get into verbal shouting matches with this youth?
- Does the youth become more uncontrollable after they have been punished?
- Do family members seem to take extra care not to upset this youth?
- Do adults in the home tip-toe around this youth in order not to upset them?
- Is there is too much conflict or fighting between this youth and their siblings?
- Do adults in the home find it easier to do things themselves instead of asking the youth to do them?
- Is the quality of the youth’s relationship with their mother/primary female caregiver poor or non-existent?
- Is the quality of the youth’s relationship with the father/primary male caregiver poor or non-existent?
- Is the family experiencing financial hardship?
- Is the family at-risk for homelessness?

Education/Vocation (16)
- Is the youth experiencing academic difficulty in school?
- Is the youth experiencing difficulty with their behavior in school?
• Does the youth have difficulty getting to school/or staying in school for the entire day?
• Does the youth miss school frequently due to family responsibilities (Sibling care, etc.)?
• Is the youth in conflict with any teachers at school?
• Does the school called home because this youth has been disruptive in class?
• Does the youth frequently interrupt classroom activity (excessive talking, unable to control themselves physically, etc.)?
• Is the youth in danger of dropping out of school?
• Is the youth behind one or more academic years in school?
• Is there any evidence to suggest the youth may have learning problems?
• Is the youth enrolled in special education classes?
• Does the youth have difficulty reading and/or writing?
• Has the youth displayed any difficulty keeping a job?
• Has the youth displayed any difficulty living up to job responsibilities or requirements?
• Has the youth displayed any difficulty with adult supervisors in work situations?
• Has the youth displayed any difficulty with same age employees in work situation?

Peers/Significant Relationships (13)
• Does the youth not have any same sex friends?
• Does the youth not have a best friend or confidante?
• Does the youth prefer to hang around with friends who are older than themselves (at least two years)?
• Are the youth’s dating relationships significantly older/younger (by four or more years)?
• Does the youth get into trouble (at school, with the police, etc.) with the persons they date?
• Does the youth have frequent conflict with the people they date?
• Does the youth associate with other young people who are known to be gang involved or are loosely associated with a gang?
• Does the youth report that they are gang involved or has been identified as being gang involved by school, law enforcement or family members?
• Does the youth have contact with other young persons who get into trouble with the law?
• Does the youth have longstanding arguments with same age friends?
• Does the youth frequently lie, gossip, and/or spreads rumors about their friend?
• Is the youth cruel or do they bully their friends?
• Does the youth refuse to bring friends home to meet adult family members?
Substance Use/Abuse (14)
• Does the youth use alcohol?
• Does the youth use marijuana?
• Does the youth smokes or chews tobacco regularly?
• Does the youth use “club drugs” (ecstasy), acid or other psychedelic drugs?
• Does the youth sniff glue, aerosol sprays, or other inhalants?
• Does the youth use street drugs or legal drugs for non-medical reasons?
• Does the youth use highly addictive drugs (crack, cocaine, heroin)?
• Do drugs and/or alcohol play a role in disrupting the youth’s academic performance?
• Do drugs and/or alcohol play a role in disrupting the relationship between the youth and school personnel?
• Do drugs and/or alcohol play a role in disrupting the relationship between the youth and his/her peer group?
• Do drugs and/or alcohol play a role in disrupting the relationship between the youth and their family members?
• Does the youth use drugs and/or alcohol with any adults in the home?
• Does the youth use drugs and/or alcohol at home?
• Does the youth have sex with people in order to get drugs?

Leisure (5)
• Does the youth fail to participate in activities at school or in the community that are available to them?
• Does the youth lack the opportunity to become involved in organizations or groups that promote the kinds of things the youth feels strongly about or is interested in?
• Does the youth have family responsibilities that limit or prohibit their after-school activities?
• Does the youth have a lot of spare time?
• Does the youth show a lack of interest in having any kind of hobbies?

Personality/Behavior (26)
• Does the youth have difficulty controlling their anger?
• Does the youth exaggerate their abilities or personal accomplishments?
• Does the youth have trouble paying attention or concentrating?
• Is the youth high strung or tense?
• Is the youth nervous or are they easily startled?
• Does the youth have problems sitting still?
• Is the youth attention-seeking?
• Does the youth try to get even with others when they feel wronged?
• Does the youth destroy their own belongings?
• Does the youth yell, shout or curse too much?
• Does the youth threaten to harm people?
• Is the youth physically aggressive towards others?
• Does the youth get into motor vehicles with others who drive under the influence of drugs and/or alcohol?
• Does the youth engage in self-mutilating behaviors?
• Does the youth engage in dangerous physical activities like jumping from high places, moving cars etc.?
• Does the youth have bad dreams or nightmares?
• Does the youth have difficulty sleeping?
• Has the youth lost interest in things they used to enjoy?
• Does the youth seem sad, moody, blue or depressed?
• Does the youth seem to not trust anyone?
• Has the youth experienced a major change in appetite (either increase or decrease)?
• Does the youth experience panic attacks?
• Does the youth have difficulty breathing, experiences pain in their chest, or complains of their heart pounding?
• Does the youth seem to be physically numb to pain?
• Is the youth preoccupied with sex or talks about sex too much?
• Does the youth seem to be troubled by who they are as an individual (in terms of their family background, the color of their skin, etc.)?

Sociability (7)
• Does the youth seem to have an inflated sense of their abilities?
• Does the youth seem to have an excessive sense of self-worth?
• Does the youth seem to think they are better or more deserving than others?
• Does the youth get bored easily?
• Is the youth cold and unfeeling towards others?
• Does the youth manipulate or use others?
• Does the youth seem to be slick or charming but insincere?

Trauma (12)
• Does the youth have a past history of physical victimization?
• Does the youth have a past history of sexual victimization?
• Does the youth have a past history of neglect (physical/emotional)?
• Has the youth been involved in a violent dating relationship?
• Has the youth has witnessed domestic violence in the home?
• Has the youth seen someone they know get really sick and/or hurt?
• Has the youth witnessed a violent act against another person (shooting, stabbing, beating)?
• Has the youth seen someone die?
• Has the youth been threatened by another person with physical harm?
• Has the youth been a victim of a crime?
• Has the youth been hospitalized for a significant injury or illness?
• Does the youth seem to be able to report details of traumatic events with little or no emotion?

Accountability (7)
• Does the youth fail to take responsibility for their actions?
• Does the youth seem to not feel guilty when caught doing something wrong?
• Does the youth blame others for their own mistakes?
• Does the youth lie with a straight face when confronted about wrongdoing?
• Does the youth try to cover up their actions after they have done something wrong?
• Does the youth seem to ignore or disregard their responsibilities as a citizen of the community?
• Does the youth seem to lack a sense of belonging or attachment to their school?

Health Services (9)
• Has the youth had any major health problems in the last year?
• Does the youth lack regular medical check-ups (at least one yearly examination)?
• Does the youth have poor nutrition or hunger-related problems?
• Does the youth have problems with their weight (either over or under)?
• Is the youth sexually active?
• Has the youth been pregnant or has impregnated someone else?
• Does the youth engage in unprotected sex?
• Does the youth have sex with multiple partners?
• Does the youth take money in exchange for sex?